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THE PATHOLOGY OF JOINT AND BONE TUBERCULOSIS.

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The pathology of tuberculosis has been, within recent years, much elucidated by studies founded upon the knowledge that the disease was, under all circumstances, the result of the hostile action of the specific bacillus of tuberculosis. When this microbe's well-known reaction to some of the aniline dyes was promulgated, pathologists endeavored to ascertain the methods by which infection was effected, the position of the microbe in the invaded tissues, its action on the cells and fluids, and finally its own ultimate fate. The field of minute anatomical investigation, thus enlarged, was still further extended by the suggestive labors of Flemming, Retzius, Fol, Rabl, and others in the study of the methods of cell-multiplication, and especially the "indirect method" through the process of karyokinesis, the most common mode of reproduction, by the primary division of the nucleus after a series of changes in the most active part of the protoplasm, the "chromatin," or tangible part. The study of tuberculosis in its gross relations is so much simplified by a knowledge of

these processes that it will here be preceded by a short review of the subject of tubercle-gensis.

Baumgarten was one of the most diligent investigators in the enlarged field of study opened up by the investigations of Koch and Flemming and their followers. His researches were made chiefly upon inoculation tuberculosis, often using the anterior chamber of the rabbit's eye. On injecting cultures of bacilli into the anterior chamber, it was found that after five days bacilli had found their way into the iris. After their invasion of the iris, cell-proliferation was demonstrable. This cell-proliferation is the first step in the formation of the tubercle after the bacteria have reached the nidus required. It involves the fixed connective-tissue corpuscles, which undergo karyokinetic changes, taking on the reproductive activity of embryonal connective-tissue, and form, by thus rapidly multiplying, heaps of so-called epithelioid cells.

The first step in the process consists in the increase in volume of the active cell. At the same time the entire cell becomes turgid and more rounded. The nucleus, whose chromatin in the resting state presents the appearance of a simple framework, enlarges and begins to exhibit active changes in its chromatin preparatory to division. The nucleus having divided, two daughter-cells are formed by the division of the cell-body. After reproduction has

thus begun, it continues in the same tubercle, by repeated division of the peripheral epithelioid cells of the mass. The bacilli are not numerous within the dividing cells, but accumulate in the cells that are at rest. They are also found in abundance in the inter-cellular lymph-spaces.

Multinuclear giant-cells may or may not be formed at the centre of the nodule, probably from the division of the nuclei of the fixed cells. Vascular changes are brought about early. Vessel walls are attacked and their endothelium proliferates. A true inflammation being present, we find, as would be expected, an abundant emigration of leucocytes, which form a more or less compact zone of so-called lymphoid or round cells about the periphery of the tubercle. This inflammatory product may be so abundant as to obscure all other elements, thus producing what is known as a "small-celled" tubercle.

Despite the fact that the blood vessels are so early affected, no new vessels are formed and the tubercle remains avascular. Sooner or later the regressive changes known as coagulation necrosis, due to lack of nutrition, begin in the round cells, whose nuclei shrink, break down, and become fluid. Then the epithelioid cells die, become homogeneous, lose their nuclei, and become pale, glistening masses. In the giant-cells partial necrosis sometimes takes place, which, according to Weigert, is recognizable by diminution of staining capacity. The nuclei are then to be seen in one part of the cell, as at a single pole, at one side of the cell, about the whole circumference, or even in its centre only. The bacilli are often found at the junction of the living with the dead protoplasm, and may lie even in the non-nuclear part. Finally, such changes taking place in the individual cells, the whole tubercle can become a single homogeneous mass, or a collection of smaller masses, each representing a single cell, or even a granular mass which contains more or less fat. Thus, the tubercle loses its gray translucent quality and becomes

an opaque yellowish body, which, by an exaggeration of the same process, may result, in combination with a quantity of serous exudate, in an emulsion-like fluid which, in large collections mixed with leucocytes and débris of connective tissue, is known as the "pus" of cold abscesses.

The contest, therefore, between the living active tissue-elements on the one hand—an army representing physiological resisting power—and, on the other hand, the hosts of microbic invaders standing for the advancing disease, can not be considered unreal. Indeed, it must be taken into consideration if we would understand the probable cause of the varying course of tubercular joint and bone disease. Schüller has proved experimentally that the microbes, having effected an entrance into the blood by way of the lungs, may be carried to parts remote. When such a mass of inimical foreigners has reached a situation favorable to the physiological functions of the bacillus, a multiplication of bacilli takes place with great rapidity. It is at this stage that the factor of local tissue-resistance and that of the invading forces are to be opposed to one another. On the one hand are the microbe's power of marvelously rapid multiplication; his ability to transform soluble albuminoids into the chemical constituents of his own body; his probable power of throwing off an alkaloidal waste-product that has a toxic action upon the tissues of the patient; his ability to resist alterations of temperature far greater than those to which his own activity excites his host; and finally, the almost incredible faculty of entering as a last resort that still lower condition of life known as the spore form, in which he can patiently await, oblivious to all but the most severe forms of external opposition, a better opportunity for self-multiplication. On the other hand, we have the cellular elements of the animal body, especially the leucocytes and the fixed connective-tissue corpuscles, the latter capable of taking upon themselves a state of active embryonic

proliferation, aided by a more or less active circulation of nutrient fluid.

Such, we may say, are the abstract factors in the struggle, the advantages of the opposed individuals.

But there are other subtler and, as yet, ill-understood moments affecting the activity of each element that can not be ignored. The significant labors of Pasteur in the diminution of the virulence of several microbes by special methods of culture indicate the probable existence of varying degrees of invasive and resisting activity on the part of micro-organisms in general. And these observations on the limitations of microbial virulence find a striking analogy on the part of the animal tissues in the long observed clinical fact that each individual of our species presents a resisting power to tuberculosis peculiar to himself. When our knowledge of the tubercle bacillus is more extensive and exact, these considerations will, doubtless, find an abundant and important application in the study of the invasive powers of tuberculosis. Koenig, probably the most experienced of clinical surgeons in respect to this disease, has divided cases of tuberculosis in bones and joints into two classes—first, that "dry granulating form," in which caseation is retarded or absent, and peripheral extension is limited by fibrillation of the newly formed connective tissue, in a word, the cases tending to recovery; and second, the "moist form" of the disease, in which fluids are in excess and the disease advances rapidly by peripheral infection. It is to be regretted that pathologists have not furnished us as yet with any conclusive evidence as to which of the two forces, invading or resisting, is responsible in individual cases for this formation of "cold abscesses" in some instances, and "dry granulation-mass tuberculosis," in others. For the present, we can only refer to the general considerations mentioned, and say vaguely with Koenig that cases have tendencies to this or that form.

PRIMARY TUBERCULAR SYNOVITIS.—That

minute masses of foreign material could be deposited in joint cavities after traumatism was proved by Schüller, as follows: A rabbit or goat having been selected as the animal for experimentation, a knee-joint was bruised with a few slight blows of a mallet, and at the same time an injection was made into the trachea or a large venous trunk of a quantity of finely divided, aseptic coloring matter. The pathological changes produced by a simple contusion depend on the amount of force and the manner of its application. The most constant and significant change is the occurrence of haemorrhages into the articular and peri-articular structures. When injections of coloring matter were made simultaneously this matter was found on post-mortem examination in the effused blood and was directly proportionate in quantity to the degree of hemorrhage. Such injuries to blood-vessels are followed by simple inflammatory reaction of a reparative character. Vascular dilatation, local oedema, and emigration of leucocytes are constant factors. If no foreign material is present except the finely-divided aseptic coloring matter recovery is rapid. Proliferation of its endothelium and connective tissue soon effects definite closure of the vessel, the effused blood is removed, the oedematous fluid is carried away by the lymphatics, and the vascular tissue recovers its tone. As for the coloring matter, the greater part of it remains in the connective-tissue spaces as a relic of the experiment, while eventually a part of it is carried by phagocytes to the nearest lymphatic gland.

Having thus proved that foreign masses floating in the blood could be so easily deposited in the tissues of the joint, it was but a step to the study of the fate of tubercle bacilli similarly introduced into the blood-current. Instead of injecting inert matter into the trachea, or directly into the vascular system, finely-divided tubercular matter was used. The same injuries as before were produced in the joints.

After varying periods the animals either died of tuberculosis pulmonum or were

killed. That the bacilli with which the blood was thus artificially infected were, like the granules of coloring matter, deposited in the injured joint-cavities at the site of haemorrhage was proved by the facts that tubercles sprang up only within the damaged joints and that blood-pigment was found within the tubercle cells.

Infection of a part having occurred at a point of minute haemorrhage, tubercles spring up in the immediate vicinity. In joints, the neighboring synovial membrane becomes vascularized, thickened, and red, and is eventually permeated by tubercular granulation tissue which has a cheesy, crumbly character.

Rarely does this process remain entirely local. For the infectious material is readily carried to remote parts of the joint cavity where a favorable point may be found for its development. Thus, several localities may be consecutively affected or the tuberculosis may become diffuse. But even in parts remote from tubercular foci, the synovial membrane exhibits a reddened vascular appearance, and without the presence of tubercles may eventually become covered with a layer of pale indolent granulations. Granulations of both kinds not infrequently fill the entire cavity of the joint and distend it till it gives to the touch a spongy resilient feeling that is useful as a diagnostic point.

It is these granulations which are so well-known to the clinical surgeon as the grayish gelatinous matter that represents the destroyed synovial membrane and causes the disease to be so frequently described as fungous, gelatinous, spongy, or hyperplastic granular arthritis.

Associated with such a synovitis it is not uncommon to notice the presence of morbid products within the joint. Clinically their appearance presents great variety. Their consideration is much facilitated by reference to their constituents, which may be divided into liquid and solid.

Of the liquid constituents the serous element is the predominant one, and when

to this fibrin is added, we have a true sero-fibrinous effusion. Adding to the serum a quantity of solid tubercular matter in a state of coagulation necrosis, and an abundance of leucocytes which are usually, though not always, found in these exudations, we have a joint cavity filled with tubercular pus, an "*empyema articuli*."

Incidental haemorrhages will be represented by the presence of red corpuscles or of blood pigment. The solid bodies observed in these joints are chiefly the result of the coagulation of fibrin into masses similar to rice bodies. They are usually deposited on the granulation layers, and become detached at a later period. They are especially observed in the form known as fibrous tuberculosis, in which *hydrops articuli* is very common.

While these active processes have been going on within the synovial cavity, the cartilage of the joint has played an entirely passive and subordinate part. Its avascular character forbids its becoming the primary seat of tubercular lesions, and it is only when infection has destroyed a part of the protecting synovialis that grave changes in it can occur. Thus, defects can be found in its substance, or only a local thinning. If the joint is filled with pus, a kind of maceration affects the surface of the exposed cartilage. As a result of chronic-tubercular inflammation, a metaplasia of the cartilage takes place, the cartilage superficially being transformed by vascularization into mucous membrane.

Consecutive to synovial tuberculosis bone affections must be regarded as either directly or indirectly the result of that process. In the former case the disease process acts immediately upon the bone tissue, producing eventually a resorption of the bone substance. But even where no infection has occurred a fatty atrophy of the bone takes place, due to the faulty nutrition of the parts, and therefore indirectly to the joint disease.

The periarticular tissues, in the more advanced form of the disease, are involved in

edematous infiltration. The connective tissue takes on a coarse, fibrous, bacon-like character, while the skin acquires the well-known, smooth, shining, and pale appearance of *tumor albus*.

TUBERCULAR ABSCESES.—When, however, the para-articular tissue is reached by bacilli from the diseased joint, a condition is presented that is of great interest clinically. Since the synovial membrane may be regarded as a lymph sac, it is not unreasonable to suppose that bacilli might be carried by lymphatic vessels to the periarticular tissues, just as we know that they are often carried to distant lymph glands. But the usually recognized method of infection is by direct outward extension of a tuberculosi of the articulating bones, or of the synovial membrane. When a synovitis tuberculosa occurs, in which there exists the tendency as above discussed to production of so-called pus, the synovial membrane is soon distended to its utmost capacity. Pressure atrophy occurs at that part of the capsule which is most imperfectly supported, and which is most weakened by morbid processes within. Rupture of the capsule relieves the pressure by permitting the escape of the fluid into the extra-articular tissue, and in many cases, collapse having taken place, the rent in the capsule is repaired by cicatrization. In this way cold abscesses often arise without the pathologist being able to find the exact point of origin. Hence it was formerly contended by many that they were often due to simple irritation. A space being formed by such a forcible means, it will naturally occur in that tissue whose mechanical resistance is least, namely, the loose connective tissue between muscles, membranes, viscera, and other structures. The newly invaded connective tissue is first covered by a layer of fibrin which is formed from the sero-fibrinous fluid. This forms a matrix for the development of tubercles. The original connective tissue below now rapidly proliferates, and speedily becomes thickened, and in this way a so-called pyogenic mem-

brane is formed. Such an abscess may be distended till its own wall in turn ruptures, and discharges the tubercular débris, either into hitherto undisturbed connective tissue, into the outside air, or into some cavity or viscus of the body. The direction in which such abscesses spread is determined, therefore, by their point of origin, and by the relative resistance of the tissues in their vicinity.

The rupture of such an abscess into some of the important organs and cavities of the body may be followed by shock, embolism, general tubercular infection, or other dire consequence. Rupture into the external air is almost invariably followed by mixed infection of the abscess cavity, and by the ultimate formation of fistulae leading into the joint.

BONE TUBERCULOSIS.—In reviewing the subject of primary synovitis tuberculosa omission has been made of that form of synovitis observed in the joints of those who have died of general miliary tuberculosis. Miliary tuberculosis of bone, occurring under the same circumstances, is of equal interest to the student of pathology and equally unimportant to the clinical surgeon. In each case the constitutional nature of the disease and its speedy termination in death precludes local interference.

There are three forms of bone tuberculosis, however, which, on account of their frequency and intrinsic importance, as well as on account of the grave complications which they may superinduce, demand the earnest study of the clinical surgeon. The three forms to which I refer are tubercular osteomyelitis, and local intra-osseous tuberculosis, in the one case associated with the "wedge-formed" sequestrum, and in the other case occurring as a tubercular granulation mass.

The peculiar appearance of the wedge-formed sequestra led to suspicions long ago that their origin must be sought in embolism. It was in 1884 that Koenig added the weight of his opinion to previous suggestions, and in 1886, W. Müller

published the result of a series of experiments undertaken to demonstrate the origin of bone tuberculosis. His most important experiments consisted in injecting into the nutrient arteries of rabbits' and goats' tibiae a variable quantity of tubercular matter suspended in a very weak salt solution. The result was chiefly dependent upon three circumstances:

1. The relative quantity of tubercular matter and of salt solution.
2. The size of the masses suspended.
3. The proportionate number of bacilli in the material injected.

For if a relatively large mass of bacteria-bearing matter was lodged somewhere within a nutrient artery, it would naturally tend to infect a large mass of tissue corresponding to the area supplied by the vessel affected, and produce ultimate necrosis of a wedge-shaped mass of bone. But when the relatively large nutrient artery of such a bone as a phalanx or a carpal or tarsal bone was plugged near the entrance of the vessel into the bone, obviously an osteomyelitis tuberculosa would occur—that is, the whole of the bone would be infected. Supposing, on the other hand, that the masses used were minute enough to reach some of the smallest branches of the nutrient artery, it is shown that a mass of tubercular granulations is produced that involves directly in necrosis only very small masses of bone. Proceeding still further, a capillary lodgment of bacilli results in a miliary tuberculosis, and a part of the injection may even pass through the capillaries into the veins and thence infect the system at large.

The chief interest, therefore, lies in the study of the "wedge" and "granulation-mass" forms. Although the "wedge" form is likened to the haemorrhagic infarct, its nature is essentially different. For here the assumption of the existence of terminal arteries, as averred by Cohnheim, is entirely unnecessary. When a tubercular mass has lodged in an artery supplying a considerable area of bone, the nutrition of

that area is of course much impaired. The plug of infected material immediately sets up an endarteritis tuberculosa which ultimately results in the destruction of the arterial wall and infection of the para-vascular tissue. Simultaneously tubercular granulations spring up at the border line between the healthy tissue and that supplied by the affected artery. In this way sequestration is early effected. The new-formed connective tissue shows a tendency to contract and thus to limit the spread of the disease throughout the neighboring bone tissue, which usually becomes somewhat porotic. The limiting layer of granulations has, however, an osteoclastic action upon the bone within it, which, however, even in the most favorable cases, is probably not completely resorbed (Koenig), thus accounting for the occurrence of relapses after recovery seemed perfect. At the same time this connective-tissue layer firmly binds the sequestrum to the healthy bone tissue.

In children the cartilage of the joint, in case the artery involved lies near one, may be part of the sequestrum; but its involvement is usually secondary. For infection by continuity of tissue is easily effected in this direction along the Haversian canals. The cartilage succumbs to the action of the disease, and the capsule of the joint is exposed. The sequestrum may form beneath the periosteum, and in that case the exit of the tubercular matter takes place through that member into the soft tissues without.

Embolism of a smaller artery than that mentioned does not result in the formation of large sequestra, but in the formation of a granulation mass, in which, however, small particles of bone may be found. An endarteritis is the beginning of the local disease process, after embolism has occurred. The bacilli having gained access to the surrounding tissues, tubercular granulations spring up and form a focus within the bone. The tendency may be toward rapid softening and pus formation, or toward peripheral

cicatrization. This form also usually occurs in the spongy bone near the periphery, and may consequently infect either the periosteum or a joint cavity.

Synovitis tuberculosa, produced either by infection from a sequestrum focus or from a granulation-mass, partakes of the morbid character and tendency of the original focus. The pathological anatomy of the synovitis, moreover, varies in but slight particulars from that which is observed in synovitis arising from direct haemorrhagic infection.

The energy of the tissues is manifested under some circumstances not only by the limitation of the progress of the disease, but also by the formation of osteophytes and by the thickening and hardening of pre-existent bone.

884 WEST MADISON STREET.

THE INFLUENCE OF THE WORK OF THE ILLINOIS MEDICAL- PRACTICE ACT UPON MEDICAL EDUCATION.

BY H. A. JOHNSON, A. M., M. D.

Read before the American Academy of Medicine.

Among the causes that have awakened a new interest in the subject of medical education there is no one, perhaps, more important than the popular study of sanitary science. If the preservation of our homes is a question of science, the care of our bodies is also a matter of science. The American Public Health Association developed in the public mind an interest in these problems, the outcome of which has been the enactment of laws looking to a better condition, so far as sanitation is concerned, of our towns and cities.

Along with this, there soon came to be recognized a possibility of improving the instrumentalities for treatment of the sick. The agents of treatment became the subjects of legislation. Laws were passed regulating the practice of medicine. This meant that the people were satisfied that

there was something more in medicine than a natural gift, something more than simply experience gained at the bedside of the patient without previous study.

The Illinois State Board of Health was created in 1877. One of the first acts of the board, as the executive of the medical-practice act, was the passage of a resolution to the effect that the diploma of a college graduating two classes in one year would not be considered to be in good standing after the first day of July, 1878. The result of this action of the board was to compel some of the prolific schools to adopt a single graduating term. It also called the attention of the profession and the people to the fact that a pressure could, in this manner, be brought to bear upon the medical colleges through legislation. If a State can exclude from practice within its own borders those who do not reach the required standard of attainments, it immediately becomes a matter of importance to the colleges that their curricula be made sufficiently broad and high to meet this standard. It was, in fact, true that persons, graduates of colleges that up to that time had full classes, were compelled to pass an examination before the board as if they were not graduates.

Some complaint was made; but there was no help for them, as the courts decided that the board was empowered to define the phrase "Medical colleges in good standing" as used in the act.

In the meantime, these schools were obliged to change their course or lose their classes. A few do still graduate two classes in the same year, but such institutions do not now graduate more than one-half of the number that annually, adorned with the parchment, formerly went forth from their doors.

In June, 1880, a committee was appointed by the board for the purpose of obtaining from the colleges themselves information upon which to base a more intelligent and comprehensive schedule of minimum requirements for practice in the State of Illi-

nois. The board desired to know what the colleges taught, how long their lecture terms continued, the number of teachers, the conditions upon which students were admitted, and the requirements for graduation, and the proportion of graduates to matriculates. The responses to these inquiries constituted the substance of the report which was made to the board in 1883, and which, much elaborated and enriched by subsequent information, has passed into our historical literature. I have not quoted the questions but have stated the substance of them. The board adopted a schedule, which went into effect in 1884, and at the risk of wearying you I venture to include it in this paper.

I. CONDITIONS OF ADMISSION TO LECTURE COURSES.

1. Credible certificate of good moral standing. 2. Diploma of graduation from a good literary and scientific college or high school—a first grade teacher's certificate. Lacking this, a thorough examination in the branches of a good English education, including mathematics, English composition, and elementary physics and natural philosophy.

II. BRANCHES OF MEDICAL SCIENCE TO BE INCLUDED IN THE COURSE OF INSTRUCTION.

1. Anatomy. 2. Physiology. 3. Chemistry. 4. Materia medica and therapeutics. 5. Theory and practice of medicine. 6. Pathology. 7. Surgery. 8. Obstetrics and gynaecology. 9. Hygiene. 10. Medical jurisprudence.

III. LENGTH OF REGULAR GRADUATING COURSES.

1. The time occupied in the regular courses or session from which students are graduated shall not be less than five months, or twenty weeks, each. 2. Two full courses of lectures, not within one and the same year of time, shall be required for graduation with the degree of doctor of medicine.

IV. ATTENDANCE AND EXAMINATION, OR QUIZZES.

1. Regular attendance during the entire lecture course shall be required, allowance only being made for absences occasioned by the student's sickness, such absences not to exceed 20 per centum of the course.
2. Regular examinations, or quizzes, to be made by each lecturer or professor daily, or at least twice each week.
3. Final examinations on all branches, to be conducted, when practicable, by competent examiners other than the professor in each branch.

V. DISSECTIONS, CLINICS, AND HOSPITAL ATTENDANCE.

1. Each student shall have dissected during two courses.
2. Attendance during at least two terms of clinical and hospital instruction shall be required.

VI. TIME OF PROFESSIONAL STUDIES.

This shall not be less than three full years before graduation, including the time spent with a preceptor and attendance upon lectures or at clinics and hospital.

VII. INSTRUCTION.

The college must show that it has a sufficient and competent corps of instructors, and the necessary facilities for teaching, dissections, clinics, etc.

Such were the standards established, which went into effect in 1884. The graduates of schools which did not come up to these standards could not practice medicine in the State without first undergoing an examination by the board.

The statistics which have accumulated since the adoption of this schedule go to show that it has had a most important influence upon the methods and thoroughness of teaching. Previous to this time the American Medical Association and other medical societies had passed resolutions and recommendations looking to a higher standard of medical education, but there had been almost nothing accomplished outside of two or three of the leading cities. Students continued to go to those colleges

which furnished them the degree with the least amount of study and money. In many instances they believed that they could make up afterward for the deficiencies of the undergraduate course, but in fact, with few exceptions, they never did.

The colleges themselves saw no reason to do what the profession did not encourage, did not even support. It is true that there were a few exceptions to this statement. In 1859 the Chicago Medical College was organized, with a graded course and a lecture term much longer than usually existed at that time. For twelve years this college was the only one in the United States with a graded course. Harvard, and subsequently the University of Pennsylvania and a few other institutions also adopted graded courses and longer terms; but at the time of the passage of the Illinois medical-practice act there had been but little advance either in the direction of a more systematic arrangement of studies or in the breadth and length of the curricula. When it was first suggested that legislation could do something to raise the standard of qualification, there were but few who believed that anything substantial could be accomplished. It was urged that the colleges were independent of legislation, and that in this free country anyone who desired to practice medicine ought to have the privilege or right to do so. The host of quacks cried "persecution," but the practical working of the law soon convinced the most skeptical that there was something being done. Many of the incompetent were driven into neighboring States, and as a result, laws similar to that of Illinois have been passed by these States in self-defense.

The last quarterly report of the secretary states that there are now 114 colleges in the United States which require evidence of some preliminary study as a condition of admission. Before the establishment of the schedule of the board, or in 1883, there were only 45. Forty-three colleges now exact attendance upon three courses of lectures as compared with 22 in 1883, and

57 others have made provision for a course of three or four years, and recommend it although they do not exact it. Hygiene is now taught in 114 colleges. In 1883 it was taught in only 42. Medical jurisprudence is now taught in 112 schools. In 1883 it was taught in 61. The lecture term has been increased, and 114 colleges now have terms of five months or more, and 61 have terms of six months or more. At the time the schedule went into effect there were 101 with five months and 42 with terms of six months.

In the meantime, institutions which have either not made any provision for instruction in some of the subjects required, or which do not exact evidence of preliminary attainments, are obliged to advertise that such of their graduates as intend to settle in Illinois may present the evidence of preliminary study and the college will certify that fact; they may also obtain instruction in the deficient branches, and this, it is thought, may save them from the humiliation of an examination by the board. As a matter of fact, it has become evident that the non-professional as well as the professional public has awakened to the importance of a more extended and a more prolonged course of study. Those colleges which make provision for this are beginning to be looked upon with more favor. They have a larger number of students of the better class, and their graduates take a higher position in the communities in which they establish themselves. All this can be verified by the facts accumulated in the reports of the board.

Of course, we do not mean to claim that all the advance of the last few years has been the direct outcome of the Illinois law. Other States have similar enactments, but it is our purpose only to speak of this State as a pioneer in this work. As we suggested at the commencement of this paper, the awakened public thought upon kindred subjects made this change a possibility. It is quite probable that the results reached would, in the absence of this public enlighten-

ment, have been impossible a few years earlier. All that is claimed for the Illinois law is that it has been the most important factor in compelling, on the part of the colleges, a reform in their methods and means of instruction. This has been accomplished by making it impossible for the graduates of the inferior schools to practice in the State. In other words, a factory turning out inferior goods gets a bad name, and the goods do not readily find a market.

As will be seen by those who will follow the work of the board, there is a new advance to be made after the close of the session of 1890-91. At the meeting of the board in July, 1887, a resolution was adopted defining the phrase "Medical colleges in good standing" to mean "only those colleges which shall, after the sessions of 1890-91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation, and shall otherwise conform to the schedule of minimum requirements heretofore adopted by the board."

Information has been received that a number of schools heretofore requiring but two courses will hereafter require three courses, and there is reason to believe that there will be a very general adjustment of the breadth and length of the courses in all of the better schools so as to meet the demands of the Illinois regulations. In fact, I learn from the secretary that about one-half of the schools have already signified their intention to qualify their graduates to practice in the Prairie State.

In closing, I beg to suggest that much of the efficiency of the Illinois medical-practice act has, as it seems to me, been the outcome of a condition of things which was, when the act went into effect, a subject of criticism. I allude to the fact that the board was what is called a "mixed" body. That it was not made up of the so-called "regulars" alone, but there were among its members a homœopath, an

eclectic, and two laymen. It was thought that nothing good could come out of Nazareth, and that the dignity of the profession was compromised by the association of its members with irregulars.

What was feared might be a misfortune has been in fact one principal cause of its efficiency. Instead of the irregulars increasing under the fostering care of the mixed board, they are falling off. This is, however, not the case in Illinois alone, but it is a general fact.

Upon the whole, we may well congratulate the profession of medicine in this year 1888. The numbers who gain access to our ranks are, it is true, not so numerous in proportion to the population, but they are better qualified, and there are, therefore, not so many inferior men to struggle for existence. The percentage of graduates to students is lower, which means a higher standard of attainments.

In response to a more intelligent, and, therefore, a higher estimate of the profession by the public, schools of all kinds, the so-called irregulars as well as the regulars, are spending less time upon theories and speculations, always incidental to scientific progress, and are devoting more time and effort in the endeavor to equip their graduates with a better knowledge of the established truths of medicine, a greater familiarity with the natural history of disease, and a higher skill in the use of the agents and processes by which suffering is relieved and life prolonged.

4 SIXTEENTH STREET.

REPORT OF A CASE OF GASTROSTOMY.

BY BAYARD HOLMES, M. D.

Synopsis : Carcinoma (?) of the lower pharynx and upper end of the oesophagus. Advancing stricture of the oesophagus for eight months. Inability to swallow solid food for five months. Dilatation for two months. Inability to swallow liquids for three days. Gastrostomy in two tempos, with an interim of twenty-four hours. No autopsy. Examination of the parts after death showed complete union of the stomach and abdominal wall.

Mr. Reels, 62 years old, a butcher, born in New York, of excellent family history. Father died at 95, mother at 76, years. No consumption in the family. Has two healthy grown-up sons; has always been a well, strong man, and able to carry on his occupation as a butcher without interruption; has had but a single illness. Fifteen years ago, while lifting a barrel of apples into a wagon, he had a copious haemorrhage from the mouth which greatly weakened him for a few days. Does not know where the blood entered the mouth; had no cough at the time, nor afterward. His usual weight, until six months ago, was between 175 and 200 pounds. Always was a good feeder. Drank only occasionally, and then in small quantities and never to excess.

His present sickness began in December, 1887, with sore throat. This continued uninterruptedly until the last of February, 1888, when it was accompanied by hoarseness, and, later, by aphonia. These symptoms disappeared in two weeks, and an advancing dysphagia took their place. Early in March, he consulted for the first time several physicians, among them, Dr. Mark Lackersteen, who informs me that, after careful examination, he diagnosed an inflammation of the pharynx, and prescribed some astringent local application. It seems that at that time the neoplasm must have been of very limited extent. By the middle of May, the difficulty in swallowing had so far advanced that that no solid food could be taken, and the patient began to complain of hunger. Rapid loss of strength and weight was noticed. In the early part of July it became necessary to occasionally pass sounds through the stricture, in order that even liquids could be taken. There was never any vomiting or dyspnoea. During sleep there was a little more snoring than usual, but no more than could be referred to loss of strength. The emaciation rapidly advanced during the last two months, until the patient's estimated weight

was eighty pounds. The cachexia, though slight, was noticeable. Hunger was always a prominent symptom, and thirst appeared during the last two weeks, as the supply of liquids became limited. Disappointing dreams of feasts aggravated him even in his sleep. At last it became impossible to pass even the smallest sounds. Feeding through a tube was never practiced. There was no very offensive odor from the mouth, nor were there eructations or other disturbances frequently noticed in stricture of the oesophagus.

Dr. Gay Dorn saw the case first on September 13, and I was called in by him on the following day. The patient was extremely emaciated. The skin was dry, and hung on the bones so as to make a remarkable impression on the beholder. It seemed that every trace of adipose tissue was gone, leaving the fossae of the head exposed. The extremities seemed bloodless, and his pulse was very weak. His voice was not strong, though it would not attract attention from its loss of volume. There was no hoarseness. Weakness was considerable, but not so great as to prevent sitting and walking, as from his bed to a chair. There was a tumor—three inches in diameter—at the beginning of the oesophagus, which seemed attached to the larynx and trachea in front, and moved with movements of these parts. The extreme emaciation favored examination. There were no enlarged lymphatics to be found by palpation. Repeated attempts were made to pass even very small catheters and urethral sounds through the stricture, but in vain. In these attempts the patient was able to offer every assistance, and allowed the guiding finger in the pharynx. This seemed in every way equal to an examination under an anaesthetic, and much safer. The outlet of the pharynx was found closed with a firm ragged mass, which seemed to rise as high as the epiglottis. The slightest touch caused bleeding, which soon stopped. The patient

said he was suffering intolerable thirst and great hunger, and asked that a hole be made in his throat so that he could take water. His mouth was dry all the time, and he was troubled occasionally by a muco-purulent discharge which caused coughing, if not removed. Enemas were no longer retained.

Esophagotomy was not thought advisable, because it is a less tried and more complicate operation, though this was a very favorable case on account of the height of the stricture. Gastrostomy was proposed, and readily accepted by the patient and by the family.

The operation was performed in the patient's residence after considerable attention as to cleanliness. Strict antiseptic precautions were used in the operation. Ether was used as the anæsthetic, though I should prefer chloroform.

Beside Dr. Dorn's, I had the assistance of Drs. Randall, Coe, and Hanna. Beginning directly under the attachment of the cartilage of the eighth with that of the seventh rib, an incision was made upward and inward parallel with the margin of the left costal cartilages and about an inch from them, for an inch and a half. The skin and muscle were divided without discovering any fat. All haemorrhage was stopped without ligatures. A dense fascia was then carefully divided in the bottom of the wound, and a small opening made in the peritoneum. The abdominal walls were so retracted that a large quantity of air began to rush in. This was first filtered by covering the opening for a moment with a sponge of carbolized gauze. The peritoneal opening was then made continuous with that of the skin, and two fingers introduced to bring up the stomach. I was prepared to find some difficulty in this, but I encountered much more than I had anticipated. The transverse colon lay in the incision. Pushing this down, I felt for the lower border of the liver and the duodenum. These were easily found. Following the gut along toward the stomach, I soon

found myself lost on the posterior wall of the abdomen or on the diaphragm. This was repeated several times. At last I enlarged the opening in the same direction toward the right, and succeeded in bringing up what seemed to be the pyloric end of the stomach. The stomach was so much atrophied that it was scarcely four inches long. When, by the coronal artery and the omentum, I had identified the part as the greater curvature and dragged it out toward the left as far as it could be attached to my incision without too much tension, I had an assistant hold up the stomach with a tenaculum forceps and his fingers until I had united again about an inch and a half of the peritoneum and fascia on the left of my incision. Then by means of a silk suture; which did not penetrate the mucous coat of the stomach, I attached to the left angle of the remaining opening a part of the stomach about three-quarters of an inch from the coronal artery and the same distance from the gastro-epiploica. The whole lower edge of the incision was attached to the stomach in the same manner by interrupted sutures. Then, the stomach having been drawn up and out of the incision with a tenaculum forceps and the fingers, the upper edge of the incision was attached to the stomach about half an inch at the farthest from the lower line of sutures. The whole peritoneal edge was then felled down with a fine continuous silk suture. When all was done, an elliptical portion of the anterior wall of the stomach about an inch by half an inch was to be seen, held in place by twenty strong, interrupted sutures. No guides were left for the incision into the stomach. After the muscle and skin at the left angle of the wound were closed over the united peritoneum with a few sutures, the remaining cavity over the stomach was packed with iodoform gauze and dressed.

The patient stood the operation well. It lasted an hour and a quarter. On the following day, with a little anæsthetic, an opening was made into the stomach, the mucous membrane drawn out and stitched

to the edge of the wound, and a tube eight millimeters in diameter introduced, through which he was fed. The wound was perfectly agglutinated, and neither supplicated nor caused any pain. Only twice did a fit of coughing cause displacement of the tube and leaking. The capacity of the stomach, which at the beginning was only about four ounces, increased rapidly, until nearly a quart was necessary to satisfy the patient. Such quantities as the capacity of the stomach would admit were given at intervals of two hours, and consisted of milk punches, egg nogg, beef tea, and a liberal quantity of champagne and other stimulants.

In spite of the fact that the patient had great relief and satisfaction from feeding, and called for food and drink as he felt the need of it, experiencing no indigestion, he gradually lost strength, and died at the end of the fifth day. On the fourth day, when the displaced tube was again introduced, the wound was found completely united. After the operation he never complained of any pain or uneasiness that could be referred to peritonitis. The bowels moved regularly after feeding began, except on the last day, when there was diarrhoea. The urine passed voluntarily until the last day, when there was retention, and a catheter was used.

The urine was never examined for albumen, which, I have since learned, appears in starvation. The temperature and pulse record, which was kept by Dr. Dorn, are given:

DATE.	PULSE.	TEMPERATURE.
September 14, 3:00 p.m.	80	98 2-5 Fahr.
" 15, 3:30 p.m.	75	98 2-5 "
" 15, 6:30 p.m.	108	100 2-5 "
" 16, 9:00 a.m.	100	99 1/2 "
" 16, p.m.....	96	99 "
" 17, a.m.....	96	98 3-5 "
" 17, p.m.....	110	99 "
" 18, a.m.....	108	98 1/2 "
" 18, p.m.....	120	98 3-5 "
" 19, a.m.....	120	99 "

GRAFTING OF SKIN TAKEN FROM FOWLS, WITH REPORT OF A CASE.

BY B. F. ROGERS, M. D.,
Passed Assistant Surgeon, United States Navy.

David Williams, 2d C. F., aet. 38, native of Wales, color, white, presented himself at sick-bay for treatment on board the *Alliance*, South Atlantic station, on the evening of April 15, 1888. He said he had injured his "seat."

On examining the patient I found a patch of skin on the left buttock gangrenous. This was about six by four inches in area, surface dry, hard, black in color, as if covered with a coating of coal tar, void of sensation, and emitted a putrid odor from its sloughing margins where separation from the inflamed surrounding parts was in progress. As to the origin or cause of this state of affairs he claimed to know nothing. He was under the influence of alcoholic stimulants, indulged in for two days previous to his presenting himself for treatment. During the time mentioned he was running the engines of the steam cutter.

From others in the cutter with him I learned that he probably sat in a pan containing a solution of caustic potash. This occurred the first day of his tour of duty in the cutter, and rather than forego the opportunity to indulge his thirst for rum he bore the pain and discomfort his wound occasioned him. The patient was bathed, placed in a cot, and the wound dressed with a moist, carbolated dressing. By May 1 the slough was completely removed, leaving the substance of the gluteal muscles bare for a space indicated above. The dressing now employed was cosmoline, oiled-silk protection, and a moist carbolated compress over all.

Skin-grafting was done from May 4, the supply being taken from the patient's arms. The abundant discharges from the granulating surface, the difficulty of retaining

the grafts in place, and the injury the patient unwittingly did to the wound at night while asleep by lying on it, rendered most of this work useless. May 8, grafts taken from under the wing of a young fowl, as recommended by Dr. Redard, mentioned in *Medical Record* of March 10, 1888, were placed on the granulations, and thereafter repeated as occasion required.

June 9, the surface had healed over, leaving only a space of one by one and a half inches open. On this date the patient was transferred to the British hospital at Montevideo, owing to the sailing of the ship for Punta Arenas, Chili. The condition of the patient rendered it advisable to do this. He proved a refractory patient, defied the hospital authorities, jumped the wall, and went on a continuous spree. Under these circumstances it is not to be wondered at that when the ship returned to Montevideo August 10, and received Williams on board again, his wound was in much the same condition as when I last saw him. Carbolated water dressings were again applied to reduce inflammation, and in a few days skin-grafting was resumed, fowls furnishing the supply, as before. September 14, the patient was discharged to duty.

The wound was then healed. The cicatrix is soft and pliable, and though the wound is much reduced in size by contraction, there is little of the character of a cicatrix following a deep and extensive burn about it.

EDITORIAL.

PTOMAÏNES AND THEIR EFFECTS.

Ptomaïnes, as is well known, are chemical compounds, the result of putrefaction; but putrefaction comes from the growth of micro-organisms alone. Ptomaïnes are, therefore, formed in no other way than by the growth of such bodies. Their number must be great, greater perhaps than the

sorts of germs; for it is not at all unlikely that the same germ in different conditions may produce different ptomaïnes. Already more than forty have been discovered, and their composition determined. Early in their history some of them were found to be highly poisonous, some resembled in their reactions known drugs. Chemists of ability had confounded them with strychnia, morphia, and the like. They were, therefore, from the first, thought to be objects of considerable interest.

The readers of this journal will remember that sometime ago* mention was made of the fact that Briege had discovered several of these substances in pure cultures of organisms found in tetanus. All of them were highly irritating to the nervous system; with one of them he had produced tetanus.

Tetanus, then, according to him, is caused by bacteria in a secondary way, the bacterium forming the ptomaïne and the ptomaïne producing the symptoms, just as yeast makes alcohol and alcohol causes intoxication.

This discovery added greatly to the interest of these substances. They were now removed from the group of bodies interesting to the chemist and toxicologist alone; they became of importance to the pathologist and practical physician.

Recently, the investigation has been extended. Briege has found a ptomaïne in cultures of the typhoid bacillus, which causes typhoid symptoms, with ulceration of the agminated glands.

A ptomaïne has been found in cultures of the anthrax bacillus which causes symptoms like those from inoculations of the bacillus itself. There is evidence to show that the cholera bacillus produces a substance highly irritating to the intestinal canal, although the bacilli probably act mechanically also.

An explanation of the way the ptomaïnes act, in some cases, at least, has been given

* August, 1887.

by Oertel in an elaborate work on diphtheria just published.

According to him the ptomaine penetrates the epithelium, is taken up by the wandering white blood corpuscles, and carried to all parts of the body. In their course, these corpuscles are more or less completely destroyed; the blood vessels are injured, and results of the action of the poison are seen, especially, in the kidneys, spleen, and nervous centres. The ptomaine dissolves first the cell-wall and then the cell itself. By a sort of catalyses, it is reproduced out of the ruins of the destroyed tissues, and the diseased activity continues although the germ from which it originated is destroyed.

It is not at all unlikely that infectious diseases, as a class, have a similar history.

Röhmann, in a recent number of the *Berliner Klinische Wochenschrift*, † makes it, at least, likely that something of this kind occurs in acute atrophy of the liver.

The continuous symptoms in some cases of ptomaine poisoning, in which articles containing the poison have been cooked and the germ, therefore, destroyed, are probably to be experienced in this way.

The field opened up to us by these studies, as well as that of the analogous leucotoxines, promises rich results in many ways and is an inviting one for investigators.

USEFUL MEMORIALS.

Hospital endowments have long been a favorite form of memorial, and, when properly conducted, have served a most useful purpose, for such hospitals constitute a very practical charity. Within the last few years, New York City has been especially favored in this way.

The growth within recent years of training-schools for nurses has led to such improvement in nursing, and the advantages of it have been so marked and so much appreciated, both by the medical

profession and the public, that encouragement is properly being given to increase the number of such schools, and to extend the field of usefulness of their graduates. This work not only renders the advantages of hospitals greater, by increasing their efficiency, but its beneficial effect is manifest outside of them. Most of the training-schools established in this country have been organized for the education of women for the duties of a nurse, but recently a school has been endowed in New York for the education of men, recognizing the fact that there are cases in which men are better adapted for some special duties in nursing, and that they should have an opportunity to properly qualify themselves for that work.

Another philanthropic gentleman has just completed a memorial training-school, called *The Henry W. Bishop, 3d, Memorial Training School for Nurses*, at Pittsfield, Massachusetts. It was built by Henry W. Bishop, of Chicago, as a useful memorial of his son, and in evidence of his appreciation of the value of the services rendered by trained nurses to his son during his fatal illness at Pittsfield, and, also, with a desire to aid in extending the widening field of usefulness of trained nurses. Such memorials are practical, benevolent, and worthy of commendation.

SOCIETY REPORTS.

CHICAGO PATHOLOGICAL SOCIETY.

Stated meeting, November 12, first vice-president, John D. Skeer, M. D., in the chair.

The committee, composed of Drs. A. E. Hoadley, C. D. Wescott, and L. B. Hayman, appointed to report upon Professor Danforth's case of gallstones, submitted the following: With the meagre material at our disposal, from which we were expected to report on the etiology, pathology, and rational treatment of the patient, we found ourselves in the position of the naturalist

† Nos. 43, 44.

who attempts to define the character and habits of an extinct animal by studying one of his fossil bones. The pathological specimen submitted for our inspection consisted of a gall bladder, right and left hepatic ducts, a small portion of the common bile-duct, and a small portion of liver from the left and right lobes.

On examination we found the following conditions :

1. The portion of the common duct attached to the specimen was about two inches in length, somewhat bound down, and firmly adherent to its peritoneal covering. There was an evident increase of the connective tissue, which was firm and inelastic. The lumen of the tube would readily admit the index finger. The walls were thick, firm, and smooth, calibre uniform, and no pouches to indicate that it had ever been occupied by stones.

2. The gall bladder was about one-fourth the normal size and almost completely buried in liver tissue by the contractions of old inflammatory adhesions. Its cavity was occupied by three large biliary calculi. The duct of the gall bladder was enlarged, firmly adherent to the peritoneum and liver tissue, and communicated freely with the common duct.

3. The right hepatic duct was enlarged, the walls thickened; the first branches were also dilated and thickened, but no evidence of rupture within the liver tissue. It freely communicated with the common duct.

4. The left hepatic duct, with its branches, was very much dilated and thickened. The branches, two or more, had ruptured within the substance of the left lobe of the liver. The laceration of the liver substance extended to the peritoneum and its under surface.

The foregoing morbid changes, excepting the laceration, appear to have existed for a long time, and, taken together with the fact that some seven or eight years ago the patient suffered an acute attack, we conclude that the trouble must date from

that time and progressed in the following manner as near as we can judge from the history of the case. We know that there was an obstruction to the common duct at or near the duodenum. As there was no evidence of obstruction in that part of the tube still attached to the specimen, we conclude that the stenosis was the result of an inflammation, and that the inflammation commenced at or near the seat of stricture, extended to the peritoneum, producing a localized peritonitis involving the visceral layer in the region from which the specimen was taken and resolution was established. How much more extensive the inflammation was we can not say. We conclude, however, that this inflammation occurred as the primary trouble seven or eight years ago. Since the occurrence of this inflammation the patient had not been well. She suffered repeated attacks of pain, nausea, and jaundice, with all the symptoms attendant upon an obstruction to the flow of bile. But it was not until the commencement of the present year that the obstruction was made complete, whether by the gradual contraction of the products of a previous inflammation, or by a recent inflammation, or the lodgment of a calculus, can not be known. After the complete closure of the common duct the accumulated bile was not provided for in the usual way, by the rapid distention of the gall bladder, as this viscous was bound by inflammatory adhesions, and the tubes previously thickened would not yield. The absorption and elimination by the kidneys was not sufficient to relieve the tension. Finally, the liver itself began to yield in the substance of the left lobe. There was a laceration that reached the under surface against the peritoneum. Here a bile-cyst was formed, which protruded from beneath the left lobe and in contact with the anterior abdominal wall, where it became adherent. It was tense, painful, and exquisitely sensitive. The patient's condition was one of *extremis*.

It was at this time that Professor Danforth first saw the case. Under the circum-

stances he made a diagnosis. He recognized that the contents of this tumor were fluid, and that the fluid was bile, and that there were also present gallstones. This remarkable diagnosis was verified by the operation. The operation was incomplete. To have completed the operation would have been to restore the continuity of the lumen of the common bile-duct with that of the intestine, directly or indirectly, by making an artificial opening between the gall bladder and an available loop of intestine lower down. The time for completing the operation, however, never came; the patient could not rally. From the careful study of the very perfect record of the case subsequent to the operation, your committee is of the opinion that nothing could have been done that was not. But prior to the operation, from January, 1888, when Dr. C. M. Weems, of Baylis, Illinois, diagnosed obstruction to the flow of bile, the case was ripe for operation. The idea that it was malignant had taken possession of the attending surgeons, and the operation was delayed so long that it was never finished. The history of this one case is sufficient to justify an exploratory incision in all similar cases where there is any doubt.

As far as the literature is concerned, cases of this kind are rare. Dr. H. M. Biggs (*The Medical Record*, November 10, 1888) presented a specimen of multiple gallstones in the liver to the New York Pathological Society, removed from the body of a man who had died in Bellevue Hospital. No history of the case had been obtainable. At the autopsy were found evidences of extensive fibro-serous peritonitis; there were also pleural adhesions and acute pericarditis. All through the liver the smaller bile-ducts were dilated, some forming cysts of considerable size and containing gallstones. Small abscesses had formed on the upper surface of the liver, and there were adhesions between this viscus and the diaphragm. There was one abscess in the left lobe, three centimetres in diameter, which, like the cysts, contained gallstones.

There was also a smaller abscess in the right lobe. From one of these abscesses the inflammatory process had extended into the pericardium, and from the other into the pleural cavity. The gall bladder contained no calculi and the larger ducts were also free from them.

Professor C. W. EARLE said he was called in consultation with Dr. Denslow Lewis, two or three months ago, to see a case of gallstones. The patient, a lady, had suffered from several attacks of jaundice from time to time, and on admission into the Cook County Hospital was greatly emaciated. Dr. Lewis, deeming an operation justifiable, made the usual incisions and removed 183 gallstones, by absolute count, most of them being about the size of a small pea, and three about the size of the tip of the little finger. The patient remained in the hospital a month after the operation, and was discharged, having made an excellent recovery.

Professor MARIE J. MERGLER read a paper, entitled "Report of a Case of Placenta Prævia Marginata."

During the winter of 1887-8, Mrs. O—— engaged me for her confinement, which was expected about July 1.

Physical Condition.—Brunette, æt. 39, very pale, medium stature, weight about 140, lower extremities somewhat oedematous, quite varicose. Appetite fair; bowels inclined to constipation; urine normal.

Nervous Condition.—More excitable than normal.

The patient had felt an unusual solicitude about her condition. She had recently attended her mother's funeral, and had subsequently dreamt that she would die during confinement. Being naturally somewhat superstitious, she attached great importance to this dream, and looked upon it as a very bad omen.

Her previous labors (9) had been normal, but unusually rapid. May 17, she awoke in the night and found that a severe uterine haemorrhage had taken place,

which, however, soon ceased spontaneously. Early the next morning I was called in. I found her looking very pale, and feeling much exhausted. She stated that the haemorrhage came on without uterine pain or perceptible contractions, but that on the day previous she had had little more backache than usual.

On examination the cervix presented an uneven surface, like that of a mass of corrugated vessels. This soft body extended beyond the os on all sides, and no presenting part could be distinguished. The internal os was closed. I made the diagnosis *placenta prævia centralis*. She had slight attacks of syncope, for which I lowered the head and ordered half-ounce doses of wine. There was but slight haemorrhage. I washed the vagina with carbolized water and packed it with strips of iodoform gauze, and advised the family to adopt every means of securing perfect mental quietude for the patient, at the same time charging them to notify me of the first indication of haemorrhage or pain. On the second day the packing was removed. There had been neither haemorrhage nor pain. She kept her bed for a week, when another haemorrhage occurred. This time, the internal os was opened sufficiently to admit the index finger. The presenting head could be distinctly felt, with no placental structure interfering, except on the right side where the edge of the placenta presented.

Diagnosis was now changed to *placenta prævia marginalis*. As she was continually threatened with attacks of fainting, I advised immediate delivery, but requested to have a consultant in the case. To this the husband consented, and I called in Professor Earle, who, on examining the patient, concurred in the diagnosis, and also advised immediate delivery.

The vagina was packed with iodoform gauze for twenty-four hours. On removal of this there was but slight haemorrhage. The os was but little dilated and rigid, and no presenting part could be distinctly

felt. At 8 p. m., I removed the packing and remained with the patient. She slept during the greater part of the night until 2 a. m., when she felt strong contractions. There was slight haemorrhage.

On removal of the packing the os was found well dilated and the head could again be felt, but was easily displaced. I sent for Professor Earle, but as haemorrhage increased and the head would not engage, I at once ruptured the membranes and brought down the foot, which was easily accomplished, on account of the great amount of amniotic fluid and great mobility of the foetus. The haemorrhage ceased and the patient had fair pains. On Professor Earle's arrival, the expulsion was much assisted by firm pressure upon the fundus. Labor was completed in about three-quarters of an hour. The placenta was slightly adherent and easily removed. No anaesthetic was used. The foetus, which was poorly developed, expired soon after birth. She lost but little more blood than in an ordinary labor, but considerable stimulation was required to ward off the attacks of fainting. After the administration of an intrauterine bichloride douche, the uterus contracted firmly. During convalescence the excessive anaemia was the only alarming symptom. The uterus remained well contracted; temperature, $98\frac{1}{2}^{\circ}$ and 99° Fahr., except on the third day, when her breasts were quite painful, the temperature rising to 100° . On the following day and thereafter it was normal. She regained her usual degree of health in six weeks.

Professor H. M. LYMAN had had two or three cases during the last twenty-five years. When haemorrhage comes on it is his rule to deliver as speedily as possible, his aim always being to protect the mother without regard to the consequences to the child. The salvation of the mother is a thing of prime importance.

Dr. A. B. STRONG had only met with one case in his practice in which he got the afterbirth away first. There was pro-

fuse bleeding before delivery, but as soon as the placenta had been removed the haemorrhage ceased.

Dr. C. D. WESCOTT: A thought has occurred to me as to rupturing through a placenta attached centrally. I would like to ask: Can we do that and deliver with safety to the child? I have met with but one case of placenta prævia, and in that there had been three quite copious haemorrhages before labor commenced, and the case convinced me that if ever I see any more, and I hope I shall not, I shall induce labor at once, if the family and my consultant will consent. The case that I refer to was one of marginal attachment, with laceration of the border of the placenta. The placenta was quite firmly adherent. I tried to detach the margin to stop the haemorrhage, and succeeded partially, but I could demonstrate by the touch that most of the haemorrhage came from the tear in the edge of the placenta. I could not determine positively whether the child was alive or not at the beginning of labor, for I had no stethoscope; it was certainly not alive when labor was completed. I introduced my hand, as soon as dilatation had advanced far enough to permit it, and had no difficulty in bringing down one of the legs through the os uteri in the manner described by Dr. Earle. Having no evidence that the child was alive, I did not hasten delivery, consequently an hour or more was consumed in the operation. The child had the appearance of being exsanguinated, and, though efforts at resuscitation were made, no sign of life was manifested. The placenta was removed with some difficulty, but the mother made a good recovery.

Professor A. E. HOADLEY: The remarks of the previous speakers have induced me to say a word on this paper, and I desire in the first place to commend the position taken in the case. I hold that we are perfectly justified in inducing early labor in these cases. But there is one point that occurs to me that has not been touched upon by Professor Earle, and that is, with

regard to the child's condition. In placenta prævia it is not only the mother that bleeds, but the child also. We know that the young infant at birth can not tolerate the loss of blood well. If there have been two or three haemorrhages, for example, and, as a consequence, a certain degree of anaemia of the mother, there should be, and usually is, an alarming condition of the infant. I have had three cases of placenta prævia, and all the babies were born alive, but died soon after birth. One of these cases had had only a second haemorrhage. The first haemorrhage stopped spontaneously, and with good care the mother went to nearly full term. The child was delivered alive, but soon expired.

Where placenta prævia is made out to be the cause of haemorrhage, both mother and child are losing blood, and I think immediate delivery is justifiable.

A CASE OF CHYLURIA.—Professor HOADLEY reported a case of chyluria, and said: I have here a sample of urine which came from a chyluric patient. In addition to the normal ingredients, it has about 1 per centum of fat in emulsion. Chyluria occurs in two forms, first, the sporadic, and, second, a form of chyluria that is dependent upon a worm that infests the human blood, and is prevalent in the tropical regions, called *filaria sanguinis*. I have examined this patient for filariae, but have found none, and must regard it as a case of sporadic chyluria. The patient is a young man twenty-two years of age, of excellent habits, and enjoys good health. He has no symptoms that could lead us to believe that there was any organic change anywhere. Examination of the urine by the microscope furnishes no evidence. He passes clear urine in the evening. During the middle of the day he will pass many coagula that are sometimes translucent, and at other times milky white.

The pathology of these sporadic cases is unknown. There are several theories. One is, that there are communications existing between the lymphatic system and

the urinary system somewhere; that the lymphatic vessels dilate until they reach some of the lymphatic vessels that communicate with the substance of the kidney, and in this way let fat infiltrate into the kidney. Chemical analysis shows that that could not be the case, inasmuch as in normal chyle there is more fat, and there are other elements that are not found in this chylous urine. I have an idea that it is a fault in digestion, not alimentary digestion, but the digestion that takes place somewhere between the time that the chyle containing emulsified fat is poured into the blood, and where the blood comes to nourish the tissues. A change takes place in the blood after the chyle is poured into the venous circulation that converts the fat into its primitive elements. How that particular process is formed I am not prepared to say, but it is arrested and the fat is eliminated by the kidneys.

Chyluria can be artificially produced by injecting oil into the blood; the kidneys will eliminate it.

The remedies I have given have had no effect. I have given ergot, atropine, strychnine separately and thoroughly without any beneficial results. The only abnormality is the presence of fat.

Professor LYMAN asked whether the patient had been examined at different times of the day and night.

Professor HOADLEY: Filaria are never found in the blood except at night. I have examined the patient at night four different times without being successful in finding them; also examined him in the day time.

TRANSACTIONS OF THE GYNÆCOLOGICAL SOCIETY OF CHICAGO.

The regular meeting was held September 28, 1888, the President, Henry T. Byford, M. D., in the chair.

RECENT MODIFICATIONS OF BOZEMAN'S UTERINE CATHETER.

Professor W. W. JAGGARD said that it was difficult to clean and sterilize many of

the double-current tubes commonly used for the purpose of intra-uterine irrigation. He begged to call attention to three models of Bozeman's uterine catheter as variously altered, in important particulars, respectively by Breisky, Breuss, and Piskacék. Bruess' instrument resembled the modification by Chrobak and Fritsch, but permitted the use of a much smaller uterine tube—four millimetres in diameter—of obvious advantage in the irrigation of the non-gravid uterus after curetttement. Although the uterine tube can be removed from the conduit-pipe, this instrument requires care in cleaning. Piskacék's model is an almost perfect instrument. It has been in the shops for some time, and has answered the purposes for which it was designed. This catheter is identical in principle, and nearly so in detail, with the "Asceptic Two-way Uterine Catheter" exhibited by Dr. H. A. Kelly to the Obstetrical Society of Philadelphia, March 1, 1888. A cut of the instrument shown by Dr. Kelly, appearing in the July number of the *American Journal of Obstetrics*, etc., may serve to illustrate Piskacék's device.

SELF-RETAINING DRAINAGE-TUBES FOR PELVIC ABSCESSSES OPENING INTO THE RECTUM.

The PRESIDENT said: I wish to exhibit some self-retaining drainage-tubes that I devised for draining pelvic abscesses discharging into the rectum. One of these was successfully used in the cure of an abscess that I opened from the rectum. I used another successfully in a double uterus with a single cervix, in which the retained blood on one side had to be excavated a little in front of and to the right of the os. It was used until the pocket formed by the previous distention (hematometra), and that extended below its outlet at the internal os, had become obliterated by slow contraction. I am now using one to drain the urine from an inflamed bladder. They are curved so that the concave side represents in profile a

semicircle, the convex side an arc of about ninety degrees. They are made of silver, or of nikel-plated metal.

PEDICLE-FORCEPS FOR VAGINAL OÖPHORECTOMY.

I have here also a pedicle-forceps, to be used in vaginal oöphorectomy. I always use ligatures when practicable, but in an operation for a small adherent dermoid, at which I assisted Dr. Newman, neither of us could apply a ligature satisfactorily. I lent him an instrument similar to this perfected one, that he left on the pedicle for two days with good results. Both ends are bent in opposite directions.

The perfected forceps has been since used in a case of vaginal ovariotomy with good results.

MODIFICATION OF SIMS' NEEDLE-FORCEPS.

Here is a new needle-forceps, or rather a modification of the Sims' pattern. They are made so as to grasp full curved needles as well as straight ones; they have an extension on the end to enable the operator to use the force of the whole hand, while the thumb and two first fingers guide the motions of the forceps just as with Sims' instrument.

PAPILLOMA OF THE BROAD LIGAMENT INFILTRATED WITH TUBERCULOUS FOCI.

Dr. McARTHUR will exhibit, through the microscope, a very interesting specimen of papilloma that I removed six weeks ago from a girl twenty-one years of age. She has had abscesses in different parts of the body since she was three or four years old, up to two years ago. Her front teeth were decayed, and her general appearance was cachectic. She also had a complete procidentia of the uterus. In spite of the fact that she had been kept in bed nearly a month, there was still a temperature of 101° and 102° , even going as high as 103° in the afternoon, not due to the prolapse, as the uterus had been replaced and did not come out while she kept her bed. She did not tolerate a thorough examina-

tion, so I put her under ether and found a small tumor about the size of a goose egg on the posterior surface of the broad ligament. I took it to be an abscess of the ovary, although not clear about it. Her pulse was very weak. At the operation I found this mass completely invested in dark gray, adherent omentum. I could not get it out without ligating and cutting away the omentum all around. Its main connection with the patient appeared to be the infundibulo-pelvic ligament. Its connection with the uterus was so friable that, upon slight traction being made, it tore loose and left a mass of apparently necrotic, bleeding omentum in my hand, extending behind the uterus to the opposite side. In removing this unhealthy tissue, I had to leave a short stretch of intestine without any omentum. The interior of the patient's pelvis seemed pretty well torn to pieces, and filled with ligatures. The abdominal cavity had been open about two hours, and considerable blood had been lost.

She has, however, made a good recovery, except that over-exertion or attacks of bowel complaint bring on a pain in the iliac region. The uterus is in a normal position, and hence cured of its prolapse, but not yet movable in the pelvis.

Professor L. L. McARTHUR: I have had the pleasure of examining this specimen, and find it to consist of a rather rare growth for this region, that is, a papilloma. By a papilloma, one usually understands a structure consisting of connective tissue and capillary blood-vessels, covered with epithelium, that may be either simple or compound, according to location; in fact, resembling the structure of the papillæ of the skin. Papillomata are found very commonly about the integument. It was formerly thought that papillomata were only to be found where papillæ were to be found, as in the skin, the mucous membrane of the mouth, etc. But that view was soon changed by finding that the papillomata may develop from any epithe-

lial surface. They are exceedingly rare when found on a serous surface, and but few are on record as being found in the position in which this specimen was found. In the "Encyclopaedia of Obstetrics and Gynaecology" a few cases have been collected by Olshausen, five I believe, the first of which was presented by Prochaska. Papillomata of the peritoneum or of the abdominal cavity occur most frequently at that portion of the ovary that is not covered by peritoneum, or only partially covered by peritoneum. They vary in shape, consisting sometimes of a single finger-like projection, at other times presenting many ramifications. In this case the tumor, when presented to me, resembled very much the appearance of a little branch of cauliflower. I do not think it could be likened to anything that it resembled more closely. The tumor measured about three centimetres in length, and two and a half centimetres in thickness. I made microscopic sections of it and present one to-night. An instructive as well as interesting peculiarity about this is the fact that it is infiltrated with tubercular foci; there are miliary tubercles scattered throughout the papilloma. Very few cases have been recorded in which neoplasms are also infected with acute or chronic infectious diseases, hence it is worth placing on record.

Lange has recently called attention to the fact that new growths may take place upon diseased surfaces, and also calls attention to the fact that carcinoma has developed from a surface that in the first place was purely of a syphilitic character. And here we have a simple growth showing infiltrations that are decidedly malignant. In reporting the four cases he has collected, Olshausen makes an interesting comment upon the fact that papillomata most frequently develop in the uncovered surface of the ovary *because* they are most likely to be exposed at that point to the action of irritant matter that may escape at the fimbriated extremity of the Fallopian

tube, as in gonorrhœal infection, in the case of tubercular pus, or of those other irritating materials that may gain admission, and explains their growing in this situation in this way. We know that papillomata do grow where the irritation is marked and continued, as for instance in the prepuce, when gonorrhœa is present, or at the vulva.

I present this as being instructive and interesting.

The PRESIDENT also reported "Two Cases of Alveolar Sarcoma of the Uterus," and said: I have had the fortune during the past summer to meet three cases of soft, or alveolar sarcoma of the uterus. I believe there are only about 100 cases on record. I have two here; the third uterus went to pieces on extraction. This makes four cases of this kind I have seen. Both of these uteri were taken from virgins, forty-eight years old. They both presented to vaginal indagation almost the same condition, except that in one the disease extended to the external os, and both presented the same symptoms, namely, haemorrhage and pain. In neither case was the discharge very offensive. Both took from one-half to one grain of morphine a day. Both had been curetted a week before the operation, in order to reduce the uterus and render their removal *per vaginam* practicable. One of the patients, Miss M—n, had been curetted three times before. She had haemorrhage after haemorrhage, each one threatening to kill her, and when she came to me she looked like a person dying with consumption, I removed the uterus with great difficulty, as the vagina was contracted from the use of styptics. The stumps healed nicely, and the patient seemed well. One morning she refused to take her food and medicine, and died the same evening. We had been unable by threats or persuasion to get her to take anything but a little rice or milk and lime-water. I suppose there is no doubt that, if she had been operated upon earlier, her life would have

been saved. Dr. Wing made a post-mortem examination. He found the stumps were in good condition, and declared the cause of death to be inanition. The most important predisposing cause of death was probably the exhausting haemorrhages previous to the operation.

The other patient, Mrs. Sh——, was stronger, and got well without a bad symptom.

SARCOMA OF THE OVARY.

This specimen I bring because it is fresh. It was taken out yesterday, and is a beautiful specimen of sarcoma of the ovary. There were no adhesions nor pain. It was first discovered in July, since when it has grown so rapidly as to be the size of a man's head.

Professor JAGGARD said that sarcoma of the uterus and ovaries was a comparatively rare morbid state. While he did not wish to cast aspersions upon the adequacy of the President's diagnostic methods, still he thought the well-established custom of this and similar societies ought to be strictly adhered to in the matter. Either sections of the neoplasm, showing plainly its alleged character, ought to be exhibited, or a report by a qualified pathological anatomist should be read. The evidence upon which the diagnosis of sarcoma in the specimens presented rests, in so far as it is contained in the President's remarks, is insufficient. This material, in the absence of such evidence, is well-nigh valueless for the purposes of comparative study and record. Dr. Jaggard was moved to utter these ungracious words by the fact that an enormous amount of really valuable material had been wasted, not only at this but also at former meetings of the Society.

Dr. J. FRANK (present by invitation) presented a vesical calculus formed around a silk-worm gut suture, inserted into the vesico-vaginal septum.

These pieces of calculus were removed from a woman about four weeks ago. She was operated upon seven months ago, at the County Hospital, for vesico-uterine fistula.

The stitches were taken with silk-worm gut, and left in. The woman made a nice recovery, and the bladder held its contents for three months, when the urine commenced dribbling again through the vagina. The woman became very much distressed, and upon examination I found that from the site of the stitches a calculus had formed within the bladder, about half the size of a billiard ball. I removed the calculus, and in one of the pieces I have here there is one of the stitches. The woman made a good recovery.

Dr. HENRY P. NEWMAN read a paper entitled "Alexander's Operation, with Report of Cases."

My object in presenting a necessarily brief report of seven recent cases of Alexander's operation is, first, to invite the consideration of this Society to the operation of shortening the round ligaments for uterine displacements.

Second, to refer briefly to the manner of operating, suggesting some modifications in the *technique*, which have been applied in five consecutive cases.

The operation, as is well known, was given to the profession early in 1882, more than six years ago, by Wm. Alexander, of Liverpool.

Since then it has been performed upward of three hundred times, as reported by different operators, with very satisfactory results. Notwithstanding these promising reports, and all that has been said and written by those who are familiar with the operation and convinced of its utility, there has been much adverse criticism from high authorities in gynaecological literature.

The clinical evidence thus far obtained is decidedly in support of the utility of the operation.

Dr. Alexander himself, in his brilliant report of eighty cases in hospital and private practice, has demonstrated the fact that the anatomical cure of retroflexions and retroversions by shortening the round ligaments is a most certain result of the

operation; and in cases of prolapsus, when he operated upon the perineum at the same time, he was equally successful with what he termed the "double operation."

The unpublished cases of our president, Dr. Byford, and those reported by Dr. J. H. Kellogg, of Michigan, are confirmatory of the success of the procedure in the hands of American operators.

Due credit should be given to Dr. Doléris, Paris, France, for his excellent paper on "Combined Operations for the Relief of Uterine Deviations or Displacements," wherein he classifies the factors which unite in maintaining the pelvic equilibrium, and endeavors to point out the indications for the performance of the Alexander and other accessory operations.

In my own cases, I had early been convinced of the advisability of using all auxiliary therapeutic measures, preparatory to shortening the round ligaments, as will be seen in the appended cases.

In three of the seven, the cervix and perineum were repaired; in one, cervix alone; in one, anterior and posterior colporrhaphy were done, and in one, scraping or curetting the uterus for vegetations, and in each instance shortening of the round ligaments was not resorted to until other feasible methods had been given a fair trial.

This manner of procedure seems to me especially demanded in cases of procidentia, particularly when there is a capacious vagina, a relaxed anterior or posterior vaginal wall, or torn perineum; in other words, where anterior and posterior colporrhaphy and perineorrhaphy are indicated. While I would not say that, in these complicated cases, no benefit could result from Alexander's operation alone, I believe it to be good surgery to fortify it by such auxiliary measures as are known to remedy the tissues at fault, and not to over-estimate the proper function of the round ligaments.

For similar reasons I should favor the treatment of long-standing or aggravated

cases of flexions accompanying backward or forward misplacements, by such methods as that devised by Professor A. Reeves Jackson and others, for restoring the integrity of the uterine walls.

The seven cases which I shall briefly outline, are of such recent date that I publish them, in this connection, merely to illustrate a modified method of operating, which has been, in the main, suggested by Dr. J. Frank, attending surgeon to the St. Elizabeth's Hospital, and its adaptability verified by dissections upon the cadaver.

I begin the operation by cutting directly down upon the internal inguinal ring, using the superficial epigastric vein, and beneath this the ilio-inguinal nerve, as guides, lying as they do directly over the canal of Nuck.

The superficial landmarks are the same as are usually followed in this operation, *i. e.*, Poupart's ligament, spine of the pubis, and the anterior superior spinous process of the ilium.

The superficial epigastric vein, as well as the internal ring, is situated midway between the two last-named bony prominences.

The primary incision, beginning just above the spine of the pubis, and extending one and a half inches or more upward and outward, parallel with Poupart's ligament, comes at once upon the vein, which will be found in the subcutaneous fat, near the upper third of the cut.

This vein, though often the size of a goose-quill, having no material importance except as a guide, is ligated and cut across leaving the ligature long, for facility in locating.

On reaching the underlying external oblique aponeurosis, which is easily recognized by its glistening white appearance, it is cut through in the course of its longitudinal fibres, and corresponding with the superficial incision.

The ilio-inguinal nerve is now seen lying along the course of the canal, just beneath or mingling with the lower marginal fibres of the transversalis muscles.

It is just beneath the point where the epigastric vein crosses the course of the ilio-inguinal nerve that the round ligament can be readily defined.

If the muscular and fibrous tissues surrounding the cord are picked up *en masse* by forceps, and slightly pulled upward, and then spread over the thumb or finger inserted beneath, the whitish, slightly flattened, cord-like ligament is seen.

It is now isolated, largely by the fingers, and made to run, care being used not to injure the ilio-inguinal nerve, which should be drawn to one side.

The ligaments should now be pulled upon to their full extent, or until the uterus is drawn upward into an erect or somewhat anteverted position, as is determined by an assistant's finger in the vagina, who either holds the uterus in this position by a sound *in utero* or immediately inserts a previously fitted pessary.

The ligament is stitched to each side of the canal by a suture of silk-worm or chromic acid catgut, passing the stitch through one pillar of the canal, then into the taut ligament and along its longitudinal fibres, and returning it through the pillar of the same side.

The *canal* is then closed by two or three sutures of the same material, made to include a small portion of the cord, but drawn only sufficiently tight to approximate the edges.

The loop of the ligament, instead of being excised, is secured by a firm stitch uniting the proximate ends, and then folded into the wound after the method of Dr. Burt, of Boston.

The wound is now closed, the customary drainage-tube inserted—supplemented by prepared iodoform wicking drawn into the depth of the tube for capillary drainage.

The ligament of the opposite side—which, after being pulled out and held by a sponge or pledget of gauze inserted beneath, was covered with antiseptic gauze and left—is now treated in the same manner.

Strict antiseptic precautions having been used in all details of the operation, permanent iodoform dressings are applied, and the wound exposed only in case of rise in temperature or excessive soiling of the dressings, until the fourth or fifth day, when the drainage-tube is removed and the wicking substituted.

Patient is kept in bed about four weeks, great caution insisted upon in getting up, and for four to five months following no severe exertion is allowed.

The pessary is retained during this period, and an elastic abdominal support worn.

CASE I.—Mrs. L., age 33, married twelve years; one child, ten years of age. No miscarriages. Puberty at fifteen.

Slight laceration of cervix and perineum. Uterus large, prolapsed, and retroverted; depth four and one-half inches. Troubled with menorrhagia and metrorrhagia for several months, the introduction of the sound invariably causing haemorrhage.

Suffered much pain at the menstrual period, and was never entirely free from distress in the pelvic organs.

In March last, I curetted the uterus for vegetations, removing a large quantity.

April 21, I performed Alexander's operation. The wound did well, and patient was able to sit up at the end of the fourth week.

In the ninth week, when she returned to her home in Nebraska, the uterus was found in good position, well up in the pelvic cavity. When last heard from, August 1, she reported herself in better health than for years, and doing her own housework, which she had not been able to do for eight years.

CASE II.—Mrs. W., 35 years of age. Had borne eight children, and had two miscarriages. Had been under medical treatment constantly for two years, and had not been well for ten.

Uterus retroverted and strongly retroflexed; laceration of cervix and perineum.

February 6, 1888, was operated upon by Dr. R. N. Hall, for lacerations of cervix

and perineum, and the uterus was dilated at the same time for the purpose of straightening.

The flexion returning, however, I was asked to do Alexander's operation.

May 31, the round ligaments were shortened. Some difficulty was experienced in picking up the ligaments, necessitating tearing of the tissues.

There was some sloughing in this case, referred partly to the tearing of the tissues in operating, and in part to the patient herself, who persisted in continually disturbing the dressings.

She was an extremely unmanageable patient, and on June 19 left the hospital without the knowledge of her attending physician, who abandoned the case, and consequently nothing further has been learned of her condition, except what may be inferred from the fact that the doctor in passing has seen her around the house.

CASE III.—Mrs. P., age 36 years, had suffered for eleven years from prolapse or procidentia of uterus; ovaries large, tender, and prolapsed, so that pessary was tolerated with great difficulty.

Was able to do little or nothing in the way of household duties, though the mother of a large family.

Menses irregular, profuse, and painful. When first seen, early in May last, the uterus was enlarged and heavy, appearing at the vulva, and the effort of straining or bearing down forced it without the vaginal orifice.

Vagina was capacious, and rectal and vesical walls greatly relaxed.

The operations of anterior and posterior colporrhaphy were advised, and a few weeks after performed, with only partial relief.

The round ligaments were shortened August 16, 1888. Wound healed promptly by first intention.

In fourth week patient was up and about, and left the hospital at the end of the fifth, feeling quite well, with the uterus retained in normal position.

She was seen six weeks after the operation at her home, and expressed herself as still feeling well. Had little or no pain at last menstrual period, and was engaged in light household duties.

Examination showed uterus held well up, and scarcely resting upon the Hodge pessary which she had been instructed to wear.

CASE IV.—Mrs. E., age 23, married four years. One child, two miscarriages. Had suffered three years with prolapsus and subinvolution following the birth of her child. She also had lacerated cervix and perineum, and suffered more or less constant dragging pain at the menses and during the month. Flow profuse, irregular, and followed by leucorrhœa; reflex dyspeptic symptoms of great annoyance, not relieved by the usual remedies.

June 1, I operated upon the cervix and perineum, with only slight relief of the reflex symptoms.

August 24, I shortened the round ligaments nearly four inches.

The operation was followed by no unpleasant symptoms, and at the end of the third week the patient was allowed to sit up, and returned to her home at the end of the fourth week.

Five weeks after the operation has none of her former distress in back and sides; dyspeptic symptoms are rapidly improving.

The uterus remains in excellent position, and involution is taking place rapidly.

CASE V.—Mrs. N., age 29 years, eleven years married. Three children, two miscarriages. Nine years ago began to have backache and bearing-down pains. From year to year these have become worse, until she has been almost incapacitated for her household duties. When first examined, some eight months ago, the uterus was found heavy, prolapsed, and retroverted; cervix and perineum badly torn; both ovaries enlarged, prolapsed and tender, so that no pessary could be endured.

In June last, the double operation upon cervix and perineum was performed; and

Alexander's operation on August 25, at her home. Though lacking in conveniences and trained attendants, patient's recovery was rapid and satisfactory, requiring but little more care and attention than an ordinary cervical or perineal operation.

In the fifth week after the operation I find the woman about the house and attending to her household duties, but exercising caution as she has been strictly enjoined.

Instead of the prolapsed and retroverted uterus, and ovaries prolapsed, tender, and enlarged, we now find both uterus and ovaries drawn well up, the latter beyond the reach of the finger.

No pain is experienced, and the patient feels herself recovered, though showing some anaemia and weakness from the confinement incident to the two operations and the result of her former condition.

CASE VI.—Mrs. G., age 34, married three years; no children. Former occupation, laundress and seamstress. Has suffered with retroversion and prolapsus for fifteen years, with distressing pains in back, with dysmenorrhœa, and irregular menses followed by leucorrhœa.

At her own urgent request, Alexander's operation was done the 27th of August last. In this case the healing was so prompt that, being obliged to leave the city for a short time, I yielded to the temptation to remove the stitches—in this instance, silk—on the fifth day. I left the case in care of Dr. C. W. Leigh, who reported satisfactory progress until subsequent dressing on seventh day.

On this day, some sudden movement in bed resulted in slight gaping of the wound upon left side.

On account of this, the patient has been kept in bed for the wound to heal by granulation. I expect no trouble from the accident. The uterus is held in good position, and wound in the right side is healed firmly. In other respects, she is in excellent condition and feels well.

CASE VII.—Mrs. S., age 27, married five

years; three children. Had retroversion of uterus and ovarian prolapse. Menses always painful, and often prolonged eight days. Pain in back. Uterus subinvolved, cervix and perineum torn. Leucorrhœa profuse and constant. Patient very much reduced and unable to work.

Trachelorrhaphy and perineorrhaphy were performed in June, and a uterine support subsequently used, without relieving her distressing symptoms.

The round ligaments were shortened four inches on September 11.

Union by first intention; uterus held well in position and everything promises speedy recovery with good results.

The last five cases are reported simply to illustrate the anatomical results of the modified method of operating.

In each instance the healing has been by first intention, the amount of surgical disturbance nil, and the results, to date, all that could be desired.

The advantages claimed are the readiness with which the round ligaments are found and separated from their environment, necessitating no tearing of the surrounding parts and disturbance of the tissues about the external inguinal ring, and the terminal filaments of the broad ligament at its pubic end, with the least possible danger of hernia as an after result.

Should it be possible, as has been suggested by Dr. Frank, and, as I learn from late readings, is practiced by Dr. Doléris, to do without the drainage-tube, the operation and after-care would be even more simplified and devoid of some of its now possible accidents.

Professor W. W. JAGGARD: The construction of the indications for Alexander's operation is a curious study. An eminent gynaecologist, especially prominent as a skillful operator, resident in a metropolis, with a large and uncommonly exacting clientèle, writes: "For unmanageable cases of posterior displacement—which I have not yet met with—a new operation has been devised, that of shortening the round

ligaments. But since this operation is in its infancy, and I thus far have not had any need of resorting to it, I cannot yet recommend it to you" (Goodell, "Lessons in Gynaecology," 1887, p. 165). On the other hand, a practitioner at Land's End sees the need of this operation one hundred times in three years! This difference in opinion and practice requires no comment, and the moral is perfectly obvious. It reminds one of Billroth's remarks on the unjustifiable frequency of excision of the pylorus for cancer. After he had determined for himself the feasibility of the operation, he waited just four years before he saw a case that indicated the procedure. Within six months of the publication of this case, the operation had been performed some half-score of times by minor surgeons.

In the cases reported this evening, two conditions were uniformly present—in each case the uterus was perfectly movable and easily replaceable.

Before resorting to such an heroic measure as Alexander's operation, it seems to me to have been the plain duty of the operator to attempt persistently the bimanual correction of the displacement, and the retention of the uterus in normal position by a suitable pessary. It is not sufficient to say that "pessary treatment" had been unsuccessfully tried before the cases came under his observation. Nowadays, it is the surgeon's duty, not merely to perform an operation, but also to determine for himself the nature and force of the indication.

For myself, I have as yet encountered no case presenting a clear indication for shortening of the round ligaments, and, hence, I have never performed the operation. But I have frequently seen the operation performed by others. In one case, the round ligaments were shortened to correct the retroversion of an infantile uterus, no bigger than the end of your thumb, in a virgin of eighteen. In two cases the retroversion was due to subinvolution, and the operation was done within twelve months of the antecedent confinement.

I desire to limit my remarks to the single point of indication for the operation. I have no intention, at present, to discuss the absolute merits of the procedure, nor its claims in comparison with the devices of Emmet, Schlicking, and others. In the interesting paper read this evening, in my opinion, the indication for Alexander's operation is adequately sustained in not a single case.

Dr. J. FRANK : There is a question in my mind as to whether the operation is performed for disease of the uterus or of the round ligaments. It can be either, although the trouble has always been referred to the uterus and not to the round ligaments. The uterus can be retroverted because the round ligaments are diseased, or the uterus may be enlarged and drag upon the round ligaments, and still the fibres may be in a healthy condition. The round ligaments are made up mostly of elastic fibres, and if there is degeneration or atrophy, I do not think the operation would be useful. I think, just as Dr. Jaggar does, that much can be accomplished with pessaries.

There is another question about this operation. Will the cicatrix that is made by the incision last? Won't it be the same as in hernia operations; after awhile the cicatrix will begin to atrophy and soften, and allow the uterus to go back into its place.

The PRESIDENT : I have, so far, operated in twenty-one cases, and believe in the operation as at first, but do not operate as much. I have had two failures. They were failures because I ought not to have performed the operation. In one case there was salpingitis with adhesions; in the other case there was an enlarged ovary and hydro-salpinx. The case of salpingitis resulted in slight peritonitis, with a temperature of 102 Fahr. for several days. I took out the pessary at the end of six weeks, and at the end of two months, when she was at her housework, retroversion and peritonitis recurred. The uterus can now be easily held up by a pessary, while it could not

before the operation, and will remain up after the pessary is removed until some strain forces it down. At present it is in position without a pessary. I think the uterus would stay in good position if the patient would allow me to remove the enlarged tube, but as it is, she is better off than before the operation. In all of my operations, I now leave the pessary in place from six months to a year. I had another case which might be called a failure, as an inguinal hernia resulted. The patient had been to some of the most eminent gynaecologists in Chicago, one of whom wanted to remove the ovaries. She could not tolerate a pessary of any description. Now she wears a pessary without trouble; the uterus is up, and she is one of the most grateful patients I have, in spite of her rupture. On account of this hernia, I threw aside my catgut, and I now use none but silk-worm gut sutures, and leave those that close the canal and hold the ligament.

One great drawback to the operation is that the patients are not always immediately cured of symptoms. If there have been pelvic contractions or adhesions, there may be a dragging on these for some months. The first case I had was of this kind. The pessary was left in two months. She complained long afterward of a dragging on the groins, but at the end of a year she could, for the first time in several years, do her own housework, and take care of her home. She had previously had gynaecological treatment for five years, the last two by myself.

In regard to the technique of the operation, I think that Dr. Jaggard is right in saying that many bungling operations are done, but that has nothing to do with the indications for so new an operation. It is possible to do a good operation. Suppuration should be exceptional. I use drainage for twenty-four hours, merely to let out the bloody oozing.

It is objected that the round ligament is not a normal support of the uterus. We do not shorten the round ligaments to sup-

port the uterus in cases of retroversion, as is so generally misunderstood; we merely turn the fundus forward and depend upon the normal abdominal pressure to hold it forward.

Of course, the operation is only for the few cases in which the displacement causes symptoms, and in which it can be replaced, but cannot be permanently retained in position by less available or less dangerous means.

ANNUAL MEETING, FRIDAY, OCTOBER 19,
1888.

The President, HENRY T. BYFORD, M. D., in the chair.

After the reports of the secretary, treasurer, and editor were read and accepted, the retiring president read a paper entitled "Twelve Months of Abdominal and Vaginal Section."

The following officers for the year 1888-1889 were then elected:

President, Charles T. Parkes.

First Vice-President, E. J. Doering.

Second Vice-President, E. C. Dudley.

Secretary, Edward Warren Sawyer.

Treasurer, F. E. Waxham.

Editor, W. W. Jaggard.

The Society then adjourned.

AMERICAN ACADEMY OF MEDICINE.

The twelfth annual meeting of the Academy occurred in New York, November 13 and 14.

After reading of the minutes of the preceding annual meeting, the deaths of Drs. C. R. Agnew and Howard Pinkney, of New York City; M. H. Bosland, of Pittsburgh, Pennsylvania; Theodore T. Wing, of Susquehanna, Pennsylvania; E. S. Dunster, Ann Arbor, Michigan, and Stephen B. Kieffer, of Carlisle, Pennsylvania, were announced.

A report of the standing committee on the requirements for preliminary education in the various medical colleges in the United

States and Canada was made through Dr. Leartus Connor, of Detroit, Michigan. It stated that in the United States there are 116 medical schools, of which it is claimed that 89 announce certain preliminary educational requirements which vary considerably. The report maintains that the most effective way of elevating the standard of requirements is by the united effort of the profession to secure definite preliminary education as an essential to the beginning of the study of medicine.

Dr. J. C. WILSON, of Philadelphia, Pennsylvania, read a paper on the "Causes and Prevention of the Opium Habit and Kindred Affections."

He divided the causes into three classes:

1. Example, as shown in case of those who become opium-eaters through the example of friends.

2. Suggestion, shown in those who acquire the habit through the reading of literature concerning it, or from familiarity with the drugs, as in case of physicians, students of medicine, druggists, and nurses.

3. Medical prescriptions.

It is an unfortunate fact that the greater number of the victims to the habitual use of opium become such through abuse of opiates originally prescribed for the relief of pain.

As measures for the prevention of such habits he suggested—

(a) The dissemination of proper knowledge of the methods by which the opium-habit is acquired, and the great dangers of this habit;

(b) A reasonable presentation of the facts in popular works upon hygiene; and,

(c) Proper protection on the part of physicians in prescribing narcotics.

He claimed that prescriptions for narcotics should not be renewed by druggists without the written order of the physician who had prescribed them, and that only in the most exceptional cases should the hypodermic syringe be prescribed for the patient's use himself. He maintained that existing laws, designed to restrain unau-

thorized sale of narcotics, are not adequate to control the evil, and that their enforcement has seemed impracticable.

Professor THEOPHILUS PARVIN, of Philadelphia, Pennsylvania, read a paper on the "Importance of Practical Obstetrics" in the course of instruction given by medical schools, in which he maintained that practical as well as theoretical obstetrics should be made a part of the regular course of every medical college, and asked the endorsement of the Academy in maintaining that position.

The annual address by the President of the Academy, Dr. F. H. GERRISH, of Portland, Maine, was delivered, in which he clearly demonstrated the necessity for more than a mere grammar-school education as proper preparation for the study of medicine, and presented the disadvantages under which the medical student labored without proper preliminary mental training before beginning his medical studies. He drew attention to the influence exerted by the State Board of Health of Illinois by establishing a minimum standard of requirements by medical colleges to entitle their diplomas to be recognized in the State of Illinois.

He further discussed certain amendments to the constitution of the Academy offered at previous meetings, one of which referred to the code of ethics. After consideration of the subject during the session of the Academy the matter was postponed until the next annual meeting.

Dr. R. L. SIBBET, of Carlisle, Pennsylvania, under the title of "A Few Words Concerning Our Academy," recalled its organization in 1876, and the fact that one of the objects of its establishment was to aid in elevating the standard of preliminary education among those intending to study medicine, and recalled the fact that at the time of its organization there were no State laws relating to the practice of medicine in our country that were rigidly enforced. He believed that the influence that had been brought to bear by the Academy

through the Fellows resident in different sections of our country had done much to aid in the establishment of State boards of examiners which exclude from practice unqualified medical men, and that graded courses of instruction had been established in many of the best medical colleges in our country. He believed that the fact that the Academy had set a high standard for admission had exerted no inconsiderable influence in these advances made toward higher medical education in the last twelve years.

Dr. GEORGE J. FISHER, of Sing Sing, New York, read a paper entitled, "The Famous Historic Masters of the Healing Art were Men of Classical Education." In tracing the history of medicine from Hippocrates to the present time, he cited many instances in which medical men whose fame was most enduring were those who had had the advantages of liberal classical education with the mental discipline which such study implies, and urged that all practicable influence be brought to bear to secure the broadest and most liberal education for those contemplating the study of medicine.

Dr. L. D. BULKLEY, of New York City, read a paper on "The Relations Between the General Practitioner and the Consultant or Specialist," the object of it being to point out the mutual relations which should exist between the general practitioner and the specialist.

Dr. GHALES C. LEE, of New York City, read a paper entitled, "The Necessity for Post-graduation Instruction in the Present State of American Medical Education," citing the fact that the first post-graduate medical school was organized in this country in 1882; that several now are in existence in different cities in this country; that the advantages offered now for medical education no longer leave it essential for students of medicine to visit European medical schools, and that the chief advantage of the physician now visiting Europe is to enable him to institute comparisons in

the methods of practice and of teaching, by familiarity with the methods of different countries, to liberalize his views.

Dr. HENRY I. BOWDITCH, of Boston, Massachusetts, read a paper entitled "Tolerance and Intolerance in Medicine; Codes of Ethics; What Code should this Academy Adopt," in which he repeated the views he entertains regarding the code of ethics of the American Medical Association, which have become well known to the medical profession.

He concluded by expressing the hope that the Academy, by the work of its individual members, by its own general labors, would tend to bring the whole profession of America up to higher grades of thought, or sentiment, and of action, so that we may at length really become what we have hitherto, but with unconscious falsehood, claimed to be, a truly liberal profession.

Dr. CHARLES MCINTYRE, of Easton, Pennsylvania, read a paper whose title was "Which is the Liberal School?"

Dr. C. C. BOMBAUGH, of Baltimore, Maryland, read a paper on "The Multiplication of Useless Drugs," and referred to the great number indicated by the index of the fifteenth edition of the United States Dispensatory. He advocated materially curtailing the number to be embraced in the list of officinal preparations, and advocated determining more definitely the value of many of them by further experiments upon inferior animals.

A paper by Professor H. A. JOHNSON, of Chicago, Illinois, "Relative to the Influence of the Work of the Illinois Medical-Practice Act upon Medical Education," was read. (It appears elsewhere in this number of the *Journal and Examiner*.)

Two papers were read by title—one on "The Treatment of Uterine Disease by other than Surgical Means," by Professor W. F. WAUGH, of Philadelphia, Pennsylvania; the other, "The Evils of a Medical Dialect Separated Widely from Classical English," by Professor EDMUND ANDREWS, of Chicago, Illinois.

About one hundred new Fellows were elected. Those from Chicago were Drs. A. H. Foster, G. S. Isham, W. Van Hook, J. S. Knox, and E. B. Weston.

As honorary Fellows: Drs. J. H. Rauch, Springfield, Illinois; Sir Joseph Lister and Sir Spencer Wells, of London, England; J. L. Champonière, Paris, France; H. D. Didima, Syracuse, New York.

Officers elected for the ensuing year are:
President, Dr. Leartus Connor, Detroit, Michigan.

Vice-Presidents, Drs. P. D. Keyser, Philadelphia, Pennsylvania; I. D. Bulkley, New York City; T. Parvin, Philadelphia, Pennsylvania; G. J. Fisher, Sing Sing, New York.

Secretary and Treasurer, Dr. R. J. Dunglison, Philadelphia, Pennsylvania.

Assistant Secretary, Dr. Charles McIntyre, Jr., Easton Pennsylvania.

Place of next annual meeting, Chicago, Illinois.

ALLEGHENY COUNTY MEDICAL SOCIETY.

A special meeting was held at Pittsburg, Pennsylvania, August 21, 1888, W. M. Brinton, M.D., President, in the chair.

Dr. E. T. PAINTER read a paper on "A Case of Oesophageal Stricture."

The patient, et. about 38, complained of difficulty in swallowing food, and its regurgitation, both liquid and solid, and of inability to drink cold water or other cool drink. It was first noticed that food would not move on in response to the usual movements of deglutition, and that its onward progress was assisted by a few gentle raps on the back. This symptom first showed itself about six years ago. From this slight difficulty in the passage of solid food to the stomach, the patient gradually found herself compelled to subsist wholly on liquid foods, and these could be retained only when taken at a certain warm temperature. Neither water at ordinary temperature, nor cool drink of

any sort, nor solid food, had entered the stomach in a period of years. She was emaciated and destitute of physical vigor.

An examination of the oesophagus with a bougie proved the existence of a band, which would resist the further progress of the instrument till the constriction willed to give way, when the bougie would easily slip into the stomach. Neither had the diameter of the bougie, nor the flexibility of a tube, nor force, seemed to have anything to do with passing through the constricting ring. Passage beyond the constriction could be made only when the ring was so disposed and inclined. There had been no pain or haemorrhage. There was no history of the introduction of a foreign body and its impaction, or of the swallowing of a strong acid or strong alkali. No aneurism was evident. There is no history of carcinoma. The constriction was sixteen inches from the lower incisors. Dysphagia and regurgitation, which prevented the patient retaining sufficient nourishing food, were the only symptoms given.

As drugs, massage, the passage of a flexible tube, and the Faradic current had failed to accomplish any good results, he resolved to give a thorough trial to the galvanic current locally applied. He employed from six to ten cells of a galvanic chloride of silver battery, placing a sponge electrode joined to the negative pole in one hand, and an oesophageal electrode connected with the positive pole within the constricting ring. This electrode consisted of an ovoid shell, seven-sixteenths of an inch by three-fourths of an inch, of perforated hard rubber, which could be unscrewed in the middle, and had sufficient space within for absorbent cotton which came in contact with a small expanse of platinum, and that in turn was united by an insulated wire to the battery.

The battery used gives a current absolutely constant in character; and a water rheostat served to differentiate the strength of the current. The applications were made three times a week for a few weeks,

then twice a week, each treatment lasting from six to twelve minutes.

At the termination of the first treatment the following contingent took place. On attempting to withdraw the oesophageal electrode, it came easily in response to traction for a few inches, when it was seized by a contraction of the oesophagus, and there firmly held for a few seconds. This peculiar accident did not happen a second time. After each treatment the patient placed herself in a recumbent position for a half-hour. At the fourteenth visit the electrode was passed through and beyond the point of stricture without the knowledge of the patient, nor did she feel any sensation of opposition. At dinner, after the fifteenth application, the patient ate meat and bread and butter.

In about three months twenty-five applications were made, obtaining most decided improvement. The contracting ring persists, but its irritability has disappeared. The patient eats, without regurgitation, of what others at the table partake, restricting herself in only one item of food—meat, which is cut fine for her. She drinks water and milk freely. For a time the stomach, unaccustomed to such foreign substances as bread and butter, strawberries, cheese, etc., made the patient aware of its change in function by dyspeptic disturbances.

The interesting points in this case are these: The ease with which a diagnosis of dyspepsia could have been made, its long existence, its obstinacy under manifold treatment, the continued presence of the stricture without its irritability, and the rapid change in character of the constriction under the influence of the galvanic current.

Dr. DUFF related the history of a case of purpura simplex in a child. The case improved under treatment for several days, when the condition changed, and is described by Dr. Duff as follows:

The child was suffering very materially from its teeth, and was biting its gums and crying a great deal. I examined its gums,

and found them very much swollen. I thought to relieve it by scarifying the gum; this was in the evening about five or six o'clock. I scarified the gum over one of the canine teeth and went home. About daylight I was called to the house, and found the child lying in bed, blood all over the mother's clothing, the bed bloody, and the child pulseless. I administered restoratives and worked with it for some time until it revived somewhat. In the afternoon I saw it again and the purpuric spots had reappeared on its back, and there was some haemorrhage from the bowels as well as haemorrhage from the bladder. The child died the next morning. There was no history of haemorrhage in the family, with the exception of the father, who has frequently had severe haemorrhages from the nose. There is no history of tubercular trouble in either branch of the family.

Dr. J. J. BUCHANAN presented a paper on "Fractured Patella Treated by Wiring."

The patient is a German laborer, and his fracture was the result of direct violence. He stated that the accident happened in the middle of the day of June 30. He continued to do his work till evening, but on the following day found that he was unable to stand on the limb. It is probable that the blow broke the bone, but the capsule held together till evening. When he was brought to the hospital, five days afterward, the joint was considerably distended and the fracture easily recognized, but the lower fragment seemed to be very small. The operation was on the eleventh day after the injury.

The most scrupulous precautions against sepsis were taken. Instruments and appliances were put through the same course of preparation as for laparotomy. Continuous irrigation with 1-2500 sublimate solution was employed, and the transverse incision was made to the full extent of the rent in capsule. The lower fragment was not larger than a chestnut. The capsule was much lacerated, and a number of narrow shreds hung into the joint; the joint con-

tained a great deal of clotted blood and bloody fluid. The joint was thoroughly washed out and all loose pieces and ragged ends and edges of capsule were cut away with scissors. The fractured surfaces were refreshed by the vigorous use of a curette.

A single hole was drilled through each fragment, the drill entering about three-eights of an inch from the line of fracture and emerging at the cartilaginous border of the fractured surface.

A special meeting was held September 18, 1888, W. M. Brinton, M. D., President, in the chair.

Dr. W. P. MUNN, read paper on "Chronic Intestinal Obstruction: Report of Case and Operation."

Mrs. E. A., æt. 31, the mother of five children, the youngest aged eleven months, the oldest twelve years of age. Two years ago she began to be of a constipated habit, but had no special medical attention. Early in 1887 she became pregnant, and in October was delivered at full term. Her confinement was uncomplicated, and her recovery uninterrupted. She resumed her household duties sooner than I thought advisable, on account of not being able to secure proper help. She never became quite as robust as she had been, and complained of constant dragging pain in the back and pelvis, but especially on the left side; the tendency to constipation continually increased, her general health failed in spite of tonic treatment, and her face assumed a cachectic appearance.

In January I was called to see her on account of a more than ordinarily obstinate attack of constipation, the bowels not having moved for seven days, although enemata had been employed every day. During the next three days she took, successively, calomel, 20 grains in divided doses, castor oil, sulphate of magnesia, and sulphate of soda, but without any effect. Then I prescribed an aloin, strychnia, belladonna, and ipecac tablet every three hours; by mistake she took one of these every hour until

twenty had been taken, at the same time using hot-water enemata twice daily. No effect was produced beyond excessive tympanites. Digital examination of the rectum showed it to be empty; *per vaginam* a sensitive induration was discovered posterior to, and slightly to the left of, the uterus.

Dr. W. S. Foster now saw her in consultation. Placing her in Sims' position, with the hips well elevated, we introduced the long tube of a stomach pump into the rectum, until it encountered some obstacle at or near the sigmoid flexure, which was partially passed after a little careful manipulation, and then injected about a quart of hot water into the bowel. She could feel this passing through the descending and transverse colon, but on rising and using the chamber, only the water retained in the rectum was evacuated; the remainder drained away slowly after several hours, but only one or two small lumps of faecal matter passed. Five times in the next three days I repeated this maneuver, adding each time an ounce of castor oil to the warm water in the syringe, and she finally had a free fluid movement, very large in quantity. This was on the fourteenth day, and all this time, although the abdomen was somewhat distended and the pelvic pain continued as before, there was no elevation of temperature or any other sign of peritonitis.

Following this attack she improved much, but it was found necessary to keep the contents of the bowels in a fluid condition by the daily administration of salines; neglect of this for twenty-four hours was invariably followed by a recurrence of the old symptoms, and necessitated a return to the long tube of the stomach pump, as before. All this time she kept up the daily use of the hot vaginal douche; but notwithstanding this, the induration in the posterior *cul de sac* appeared to increase; the left ovary could be isolated by careful bimanual examination, and though somewhat enlarged and very tender, it was very slightly movable. The right ovary seemed to be

normal in size, location, and mobility, but was abnormally sensitive. Her pelvic pain radiated from the ovaries and was constantly increasing in severity.

Early in March an attack of peritonitis threatened, but was averted by the free and persistent use of saline cathartics. Following this, she gained strength for several weeks, and at the end of the month she was able to be out of bed for a few days, but the improvement was only temporary, and the end of April found her once more bed-ridden.

Two attacks of localized peritonitis occurred between this time and the 10th of June, and each time the patient rallied more slowly. Her appetite began to fail, and even the semi-daily administration of salines failed to keep the contents of the bowels soluble. The constant catharsis was also a severe drain on a naturally strong constitution.

The exact nature of the obstruction could not be determined, but it was certainly at or near the sigmoid flexure. The possible conditions were from, *first*, simple stricture or narrowing of the bowel; *second*, a neoplasm, perhaps malignant, involving the bowel at this point; *third*, constriction by fibrinous bands, resulting from peritonitis; *fourth*, a tube or ovary, probably the left, attached to the bowel as a result of inflammatory action and forming the obstruction.

Palliative and expectant treatment and persistent use of electricity having utterly failed, and the patient's condition becoming progressively worse, operative interference seemed the only resort, with the view of removing the obstruction if possible; and if not removable, to then stitch the bowel to the abdominal wall and establish a faecal fistula.

Accordingly, on July 13, assisted by Dr. W. S. Foster, I opened the abdomen by a linear central incision five inches in length.

The *left ovary* was cystic and about an

inch and a half in diameter, dislocated into the *cul de sac* of Douglas, and adherent by its posterior surface to the last movable portion of the intestine. The uterus was enlarged and slightly retroverted. The ovarian pedicle and the Fallopian tube were ligated with twisted silk, and removed. The right ovary, on examination, proved to be cystic also, and was removed. Adherent to the great omentum there was found a colloid body about a half-inch in length, similar to those I have seen in cases of ruptured ovarian cysts with colloid contents. This was ligated and clipped off, but was unfortunately mislaid, and the opportunity for a microscopical examination lost.

Convalescence was uninterrupted after the second day, although up to that time persistent bilious vomiting occasioned some anxiety. The bowels were fully evacuated on the fourth day by the use of saline purgatives, and after that moved naturally and unaided, except by an occasional aloin, strychnia, and belladonna tablet every day or every second day. One slight attack of constipation, lasting four days, occurred six weeks after the operation. She is still in Ohio, and writes to her husband that her strength does not return rapidly, though her appetite and digestion are good.

In reply to an interrogation, Dr. John Ashurst, Jr., has kindly given me the following statement of similar recorded cases :

PHILADELPHIA, August 17, 1888.

DEAR SIR: Your letter of 16th inst. is received. In the International Encyclopaedia of Surgery, vol. vi, p. 74, I have tabulated thirty-seven cases of laparotomy for obstruction of the bowels from tumor, strictures, ulcers, etc., ten of these thirty-seven cases having ended in recovery. I have since added to my list eleven cases, of which five are said to have terminated favorably, so that the figures now stand thus :

Recovered.....	15
Died.....	30
Undetermined.....	3
—	
Total.....	48

Very truly and respectfully,

JOHN ASHURST, JR.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The sixteenth annual meeting of the Association was held in Milwaukee, November 21, 23, and 24. Dr. C. N. Hewitt, of Red Wing, Minnesota, presided.

The first report made was that of Major CHARLES SMART, of the United States Army, being the report of a special committee on "The Pollution of Water Supplies," insisting on the harmfulness of sewage in potable waters from whatever source derived, whether from wells or larger sources of supply—whether supplied to dwellings or populous cities, and however remote the source of the contamination might be, so long as the sewage could in any way reach the water supply. The report drew attention to the fact that the pollutions of the smaller sources of supply of water were recognized and remedied, whereas the larger sources, though more injurious, may be overlooked or longer disregarded, and instanced the contamination of the waters by the sewage of the city of Chicago as pumped into the canal from the river and conveyed to the towns along that canal, and considered the matter of purification of water in its passage. Although that report admits that aeration doubtless does measurably promote the oxidation of organic matter under such circumstances, it claimed that various bacteria and bacilli that are known causes of malarial and typhoid fevers and many epidemic diseases were propagated under such circumstances. It stated also that settling basins, such as are used at St. Louis, nor large filters, such as are used at Atlanta, remedy this evil; that it is neither the odor nor discoloration that are the

index of the pollution and potability of any water supply. Those may be remedied so far as can be observed by the unaided eye, but only careful microscopical examination or chemical analysis can determine those points.

The report indorsed the verdict of English authorities that rivers which have received sewage, even though such has been purified before it is discharged, are not safe sources of potable water. The conclusion was that, reduced to its lowest and simplest terms, the question of water supply is this: "The raising of sufficient money to bring in the wholesome water, and the investment of the health officer with power to preserve the wholesome quality of the public supply, and to prevent the use of water from sources which are known to be unwholesome." He cited the advantages resulting from an establishment of State boards of health in Massachusetts, Illinois, and Minnesota, with the power conferred upon them to examine into and regulate the sources of water supply within those cities.

The annual address of President HEWITT was next delivered, which maintained that the cause of public sanitation needs intelligent, hearty, and constant interest in, and support from, all classes of people. The aim of the Association should be to secure the diffusion of the greatest amount of intelligence among all classes, to guard against those things which result in disease, and especially to protect the homes of the poor who have neither the intelligence nor the power to protect their own homes. He quoted the language of a former president, who said: "To secure for all most perfect action of body and mind, so long as it is consistent with the laws of life; to help make all growth more perfect, decay less rapid, life more vigorous, and death more remote, are the ends sought by public sanitation." He dwelt upon the advantages of detailed sanitary work at all times, and the advantage that it gave by systematic organization in case of the occurrence of

epidemics, provided great care was exercised. He maintained that the highest efficiency of local boards, rural as well as urban, is of the first consequence, and that the true function of a National board should be, on the one hand, to facilitate and cement the independent helpfulness of State boards among each other; and, in the second place, to provide for a thorough international system of sanitary inspection in connection with our consular system.

A paper by Dr. BENJAMIN LEE, of Philadelphia, was read, giving a series of synoptical memoranda of observations made at various quarantine stations along the Atlantic coast, including that of New York, which, though expensive, had fallen into a dilapidated condition, and was hampered by antiquated and inadequate methods under a system of political spoils-grabbing and assessments, with an enormous income from fees and fines attached to office; that of Philadelphia, of abutting on a sewer-polluted marsh; that of Baltimore, situated too near the city, and lacking proper means for disinfection; that of Norfolk, Cape Charles, and Wilmington, described as sanitary sepulchres not even whitened for appearance sake. From these observations he gave the following estimate of the system:

1. Want of uniformity in quarantine regulations, placing one port at a disadvantage, either commercially or sanitively, as compared with another.
2. Conflict of authority, owing to the methods of appointing officials.
3. Entire lack of appreciation on part of local legislatures, whether State or municipal, of the importance of the expenditure of considerable sums of money in order to render quarantines efficient and impressive.
4. Tendency on part of the local, civic, and sanitary authorities to limit their responsibility to the protection of their own city, reckless of the consequences which may ensue to inland communities if they permit infection, which circumstances ren-

der harmless to themselves, to pass unchallenged to the latter.

Dr. CROSBY GRAY, health officer of the city of Pittsburgh, Pennsylvania, presented a report on the contamination of that city's south side water supply by surface drainage, in which he gave the results of a very careful topographical, chemical, and biological examination into the general causes of a higher death rate on that side of the city than in other portions of the same city, and particularly regarding a severe epidemic of typhoid fever which occurred recently in the district described. His investigations demonstrated that the water supply drawn from the Monongahela River is being greatly and seriously polluted by sewage, factory refuse, and other nuisances, and that the epidemic referred to had been caused by the sudden down-wash through rainwater surface drainage of the excreta of typhoid patients through gullies above the in-take.

After an attempted estimate of money lost resulting from neglect of sanitary conditions, he claimed that this great waste might be stopped by the establishment of improved water service, drawing its supply from unpolluted sources, which would in the end prove an economical measure, even though the expenditure in securing such supply might be great.

Dr. H. B. BAKER, secretary of the State Board of Health of Michigan, advocated more methodical and thorough classification of vital statistics, based on scientific and instructive principles, in order that statisticians may be enabled to draw reliable and useful conclusions.

Dr. J. H. RAUCH, secretary of the State Board of Health of Illinois, read a paper on "Yellow Fever, Panics and Useless Quarantines, its Limitation by Temperature," in which he strongly urged the establishment of an efficient National board of health. He maintained that with the thermometer at 70° Fahr. or lower, there was no danger of the spread of such an epidemic of yellow fever as has recently occurred in our Southern States

and that much of the quarantining that had been done against them was unnecessary, and sometimes even cruel; that the importation of the disease should be provided against by the most careful, expert, consular espionage, and kept out by rationally efficient coast quarantines.

He drew attention to the depressing influence of fear of individuals and panicky feeling existing in communities in time of epidemics, and maintained that frank and accurate statements of facts promptly and authoritatively made at such times do much to guard against the demoralized state which often accompanies such epidemics, and advocated that efficient and harmonious co-operation should prevail among the various State boards of health.

Dr. F. MONTIZAMBER, quarantine officer in the Province of Quebec, read a paper giving a detailed account of the equipment on land and water for the care of immigrants stationed on Grosse Isle, and appliances for disinfecting vessels. It was followed by a discussion as to whether sulphurous acid gas is better, generated by combustion in the hold, or forced into it by means of a fan.

Dr. L. N. SALOMON briefly described the New Orleans quarantine station, describing improvements in location and equipment, present and prospective.

Dr. S. H. DURGIN, quarantine officer at Boston, described the methods observed at that quarantine station.

Dr. S. S. KILVINGTON, president of the State Board of Health of Minnesota, read a paper, in which he described this as "the era of filth formation." He strongly advocated careful sanitary measures for every modern city. He also advocated the destruction of garbage of cities by cremation. He described the characteristics of the different crematories now in operation in this country.

In discussing the merits of the different forms of crematories now in use for the destruction of garbage, Health Commissioner DeWolf, of Chicago, stated that

while he had believed in the practice of garbage destruction by fire, yet he had recently been converted to what he considers a more economic, yet sanitary, disposal of garbage by the Buffalo distillery crematory.

He was followed by Health Officer Clark, of Buffalo, who described that crematory. He stated that it is odorless in its working, and that the expense of running it was defrayed by lubricating oils which were extracted in the process, and that the result of the distillation furnished fuel for the running of the furnace, thus economizing in the use of coal.

Dr. J. COCHRAN, of Alabama, read a paper on the problems of yellow fever epidemics, in which he noted the fact that yellow fever has not obtained a permanent foothold in the United States, but believed that there was danger that it might do so in that part of Florida south of the frost line. Thus far the disease has been transferred from one locality to another by persons who have been in the infected district. He advanced the idea that cats, dogs, and other inferior animals, might be a cause of spread of the contagion, as has been claimed to have been done in times of scarlet fever and diphtheria epidemics. He drew attention to the greater danger of individuals to exposure in infected districts by night than by day. He believes that white people are more susceptible to an attack of scarlet fever than negroes, men more than women, adults more than children; that persons of dark complexion are more liable than those of fair complexion. He opposed the depopulation of infected cities, and claimed that the disease makes slow progress at first, sometimes being confined to a single house, and spoke of the advantages of care in isolating private residences, which often brings immunity to the occupants of residences thus isolated. He also opposed the formation of refugee camps.

Dr. A. N. BELL, with others, submitted evidence confirmatory of the impression

that the disease is infectious rather than contagious; that the clothing of the individual may be a means of infecting other persons, but that the disease is not taken by one individual from another even by actual personal contact—facts which seemed to have been well established by previous experience.

Dr. BELL presented a report of the committee on sanitary and medical service of emigrant ships, which showed the great deficiencies existing in that service.

The Lomb prize in hygienic dietetics was awarded to Mary J. Hinman.

Several papers were read by title. Some routine business was transacted, and the Association adjourned.

President for the following year, Professor H. A. Johnson, M.D., of Chicago, Illinois. Next place of meeting, Buffalo, New York.

FOREIGN CORRESPONDENCE.

To the Editor of the Medical Journal and Examiner:

The annual meeting of the Italian Medical Congress was held in Rome on October 20, 22, 23, 24, and 25. Professor G. Baccelli, of Rome, acted as president, and Professor E. Maragliano, of Genoa, as secretary. The reunion was held in the University building, and was largely attended. President Baccelli delivered an address, dwelling especially on the visit of the Emperor of Germany, and on the duties of physicians in times of peace and war.

On October 22, a most thorough discussion was held on pneumonia. Professor Bozzolo, of Turin, spoke at length on its etiology. He mentioned the recent published studies on the diplococcus of Fränckel, and on the streptococcus of Friedlander, and showed that the former is capable of giving origin to very different gradations of the disease. He admitted that other infective agents may determine pneumonic processes. He also demon-

strated that the pulmonary cells offer a different resistance to the invasion of the diplococcus, according to the *circumambient* conditions.

Professor Magliano spoke on the treatment of pneumonia, regarding its etiology and pathogenesis. He admitted that pneumonia is an infective disease, and demonstrated that we must admit that the hypocinesis and the acinesis of the heart is due to the presence in the circulation of a toxic principle developed from the pathogenic micro-organisms. He did not approve the nihilism and the parenchymatous injections, and discussed the advisability of bleeding. To lower the fever, he advised the cold bath, and spoke against the objections raised against the refrigerant treatment. To avoid cardiac enfeeblement he avoided the use of ipecac, but prescribed alcohol, digitalis, and strophanthus.

Dr. Lucatello had observed, in examining the blood of pneumonics that the serum is absolutely sterile, and he attributed this to the development of a toxic substance from the pathogenic micro-organisms.

This important subject provoked interesting discussion from Professors Cardarelli, DeReuzi, Amoroso, De Giovanni, and others. Professor Cantani, of Naples, did not approve bleeding for the purpose of eliminating morbid poisons, and only rarely to empty a laboring heart. A physician must not treat the *pneumonia*, but the patient in general.

Professor A. Bianchi reported many of his researches, by which he had concluded that the heart in pneumonia dilates, and he therefore favored bleeding.

Professor Roucisvalle, of Catania, described several cases of infective pleurisy studied in his clinic.

In October 23, Professor Cardarelli, of Naples, spoke on the treatment of the functional disturbances and neuroses of the heart.

Professor De Giovanni, of Padua, mentioned the discussion held at the last

congress at Wiesbaden on the cardiac gymnastics advocated by Hirtel. He said that the treatment of some cardiac disorders ought to be dietetic and gymnastic.

Professor Rummo explained the pharmaceutical therapy of the organic diseases of the heart, and demonstrated that the mechanism of treatment consists in proportionating the activity of the cardiac motor to the potency of the circulatory resistance with the least possible waste of strength.

In the afternoon Professor Murri, of Bologna, spoke at length on the genesis and the nature of fever, declaring himself against the majority of the modern scientists who believe it the effect of a mechanism always identical in different cases—that is, "the excitement of nervous centres as producers of the fever itself." He believes, instead, and demonstrates it on animals, that the nervous system of the patient is not the cause of the fever, but that the infecting material which enters the blood is. He therefore believes it impossible to speak of an unique treatment of fever, as there are as many fevers as infective diseases.

Professor Maragliano, of Genoa, did not agree with Murri about the mechanism of fever. He explained the good results which he had obtained with the moderate use of antifebrile remedies, also the advantages on the general condition of the patient, on his strength, etc.

Professor Cantani dissented from Maragliano. He combated the fever only in rare cases, and his ideal treatment would be to combat the cause, which we can not do at present, except in a few of the infective fevers.

Professor Baccelli, in resuming the discussion, said that he treated the fever, yet recognized that at times it ought to be let alone as beneficial to the organism. He favored cold ablutions, and recommended especially the application of ice in some regions of the body, as on the sides, and back of the neck.

On the 24th, Professors Cantani, Cardarelli, De Reuzi, Maragliano, Petri, and Rummo discussed the subject of diabetes and its treatment.

Dr. Peusuti made a full report of a case of an echinococcus cyst which he had in his clinic.

Professor Rovighi read a paper on amyotrophic sclerosis. He described his microscopical studies and reached important conclusions.

Dr. Lucatello discussed some muscular dystrophies, and showed several histological specimens.

Professor Fenoli described a case of poli-myositis, and presented some microscopical preparations.

Professor Cardarelli described a disease occurring in children, characterized by fever, enlargement of the spleen, and great emaciation. In one case the spleen was extirpated by Professor D'Antona with benefit to the patient.

Professor Ferretti reported the good effect obtained by introducing long needles into the spleen, with the view of diminishing its volume in malarial patients.

Professor Fazio, of Naples, had had analogous results with the injections of quinine in the spleen.

Several other subjects were discussed. Professor Amoroso spoke on the pulse, Dr. Testi on the treatment of typhoid fever, etc., etc.

On October 25, Dr. Guardi reported some good results obtained with the hypodermic injections of carbolic acid in some forms of neuralgia, as sciatica, superorbital and intercostal neuralgia, etc.

Professor Patella spoke of an epidemic of jaundice observed by him. He also showed some histological specimens of a case of chorea, in which little spots of softening would be seen, due to embolism of the capillaries of the encephalon.

A case of an intestinal invagination was next described by Dr. Ibla.

Dr. Serrafini spoke on the etiological unity of some forms of cerebro-spinal

meningitis, pleurisy, pneumonia, and peritonitis, in which he found the etiological relation of these forms with the diplococcus of Fränckel.

At the afternoon session Professor Vizioli, of Naples, presented to the Congress an interesting hypnotic subject. The subject was a young Neapolitan lady who had received much benefit by hypnotism for the relief of hystero-epileptic convulsions, nervous asthma, and attacks of sleep which would last at times over two days. Professor Vizioli stated that he presented a case of great hypnotism, very rare, and such as has been described by Charcot, with the three classic stages, the lethargic, the cataleptic, and the somnambulic.

The young lady lay on a sofa, and by converging on her right eye the rays from a small mirror she was made to fall in the first stage of lethargy in one minute and nineteen seconds. While in this stage the professor provoked the following phenomena of neuro-muscular excitability: By touching the facial nerve the face contracted as if to laugh; by pressing on the cubital nerve the hand closed as if to grasp something, and opened again. Consciousness was totally lost.

From this stage the subject passed rapidly to the cataleptic state. By pressing on the occiput the subject fell into the somnambulic state. She was then suggested to have, after five minutes' time, a paralysis of motion, and of sensation of the right arm, also an anaesthesia of the pharynx.

The subject was wakened by blowing of breath in the eyes, and after five minutes, the paralysis of the arm was complete as was suggested. She was punctured with pins, also a flame of a lamp was put under the palm of her hand, yet she felt nothing. The pharynx was also proven to be anaesthetic.

Professor Vizioli desired to demonstrate by this experiment the existence of an hypnotism induced by somatic characters, as an organic form of neurosis, distinct

from the neurosis due to psychical causes, —that is, by means of suggestion. He wanted to demonstrate that in determinate subjects the three stages naturally follow each other, without imposition of an external will, and with particular characters of flexibility, of muscular and nervous contractility, which, indeed, characterize the spontaneous nature.

Several other cases were reported to the society and discussed. The work of the Congress being ended, President Baccelli, after a neat speech of thanks, adjourned the meeting to 1889, to meet again in Rome on October 15, 16, 17, and 18.

Professor Guido Baccelli was again elected president; Professors A. Cantani, and A. Murri, vice-presidents; E. Maragliano, secretary, and E. Rossoni, treasurer.

Last Sunday, October 28, two monuments were dedicated at Milan. One was dedicated to the memory of the late Dr. Gaetano Pini, the founder of the Milan Rachitic Institute, of the Italian Society of Hygiene, and of the Cremation Society. The other was dedicated to the late Dr. Agostino Bertani. He was a patriot, a follower of Garibaldi, and took part in all the principal battles for the independence of his country. He was the author of an important sanitary codex, which has been unanimously approved at the last session of the Italian parliament. Both men have been deeply mourned as a great loss to their country, to humanity, and to science.

A. LAGORIO, M. D.

CHIAVARI, ITALY, October 31, 1888.

OBITUARY.

DR. H. D. SCHMIDT.—All readers of the *Journal and Examiner* will learn with deep regret of the death of Dr. H. D. Schmidt, of New Orleans. His valuable papers have been among the very best contributions to this journal. Though a great physical sufferer and in straightened pecuniary circumstances, he has, for years

carried on, unaided, investigations which rivaled the best laboratory work. In many departments of histology and pathology his name will not soon be forgotten. Some few, perhaps, will appreciate how much this cost. We have plenty and to spare of men of worldly wisdom and business acumen, but we cannot afford to lose one of his spirit. Peace to his ashes. L.C.

PROFESSOR H. B. SANDS, M. D.—In the death of Dr. H. B. Sands, at the comparatively early age of fifty-eight, New York loses her most prominent surgeon. As a teacher, his lectures were clear and forcible, and occasionally spiced with genial and clean humor. He was justly popular with his classes. He had a large professional experience, his judgment was excellent, and he was a good and, what is more, a conscientious operator. His acquirements covered all that was within easy reach. He used well what others had gained and what was well known and certain, without worrying about the unknown or doubtful, or contributing much himself. An able, safe, and conservative practitioner, he reaped the reward of his wise expenditure of strength in gaining a high social position, many warm friends, and a large and lucrative practice. L.C.

EXTRACTS AND ABSTRACTS.

WHEN AND HOW SHOULD DIGITALIS BE PRESCRIBED?

Dr. Henri Huchard, the distinguished clinician of Paris, has recently written a brochure in answer to these questions, from which we abstract the following:

One of the most important things in connection with the administration of digitalis is the cumulative action of the drug; and the following rule should be adhered to. Since the doses of digitalis add up, as it were, the drug should be prescribed in decreasing doses, and its administration should not be continued in large doses for

more than four or five days. Beside the cumulation of action, there is also cumulation of dose, which Gubler defines as follows: Cumulative action is the storing of the drug in an organ (the stomach or intestine), cumulative dosage is the storing of the drug in the organism. From this must be deduced the practical conclusion that drugs that have cumulative action should be given, in so far as possible, in liquid form.

Huchard says that he very rarely has any of the unpleasant effects that are so often seen from the administration of digitalis, and that the reason is that he never violates the rules that should govern the administration of the drug. The disagreeable effects of the drug do not appear while edema persists. While digitalis cures asystole, it may cause a kind of toxic asystole. Among its disagreeable effects may be mentioned a pseudo-angina, which must be distinguished from precordial anxiety, and from true anginous attacks in subjects of angina, provoked by abuse of digitalis. The most important of these effects, however, are those produced on the side of the digestive tract. The precocious vomiting caused by digitalis is due to the topical action of the drug on the gastric mucous membrane; the later vomiting comes on in about twenty-four or forty-eight hours after the administration of digitalis in large doses, and is caused by toxic action. The numerous bad effects ascribed to digitalis may dismay the practitioner, and cause him to deprive himself of one of the most useful of drugs. Much can be learned, however, from a careful reading of Huchard's answer to the question.

When should digitalis be prescribed? In answering this question Huchard takes up first, cardiac affections, and discusses the administration of digitalis according to the period of the heart disease.

Digitalis should not be given in the early phases of what Huchard calls arterial cardiopathies. For a long time he

has insisted upon the capital distinction between valvular and vascular or arterial cardiopathies. The latter are nothing else than the localization of the arterio-sclerosis on the heart; they are characterized, during the greater part of their evolution, by a more or less considerable increase of arterial tension, which is the cause, not the effect, of the sclerosis. Now, in the first periods of arterio-sclerosis of the heart may be recognized all the symptoms of hypersystolism just described, and digitalis should be given, if at all, only with the greatest caution, since by increasing vascular pressure it may lead to cerebral haemorrhages, and by it, also, the nocturnal palpitations are increased, dyspnoea becomes more intense, and anginous attacks may be provoked.

At an advanced period of cardiopathies, one often finds albumen in greater or less quantity in the urine. This is not an absolute contra-indication to the use of digitalis. The dangers of the administration of active medicines in renal affections have been much exaggerated, though there are certainly some dangers. But they demand prudence, not the doing away with drugs. That digitalis can be safely used in these cases is probably due to the fact that it is not eliminated by the kidneys, as was shown by Lafon some two years ago. While albuminuria is not positive contra-indication to the use of digitalis, therefore, it should be used with caution in these cases, in moderate doses for two or three days, and its action should be carefully watched. Used on these principles it may diminish or cause to disappear certain forms of albuminuria, when it is of cardiac origin, or produced by passive congestion of the kidneys, in the absence of any sclerous or other lesion.

In giving digitalis in valvular lesions, the seat of the lesion is sometimes of importance in indicating the drug. In aortic stenosis, for example, we know that the cardiac contractions and the pulse are slow. Then why should we give a drug

that will slow them still more? By doing this we expose the patients to the dangers of digitalism. In aortic insufficiency the diastolic rest of the heart is already long enough; digitalis makes it longer, and increases the already high arterial tension caused by the disease. Why add to the injurious effects of the heart disease? In mitral insufficiency it should be prescribed only in cases of great cardiac irregularity, or of confirmed hyposystolism. In pure mitral stenosis it often causes bad effects. It should not be forgotten that mitral and aortic stenosis are the two cardiopathies that may remain latent for a long time, and require treatment late. In aortic affections, and especially in Corrigan's disease, digitalis is often contra-indicated for a long time. It raises arterial tension in an affection in which this is already exaggerated; by increasing the suddenness of the systole it gives to the blood-waves violent and repeated oscillations, which, added to the high tension, may cause cerebral haemorrhage; it prolongs the already augmented diastolic period; finally, it contributes, by its vasoconstrictor action, toward increasing the visceral and peripheric anaemia caused by the disease. In aortic affections more than in any other, is it wrong to localize the lesion at the aortic valve, and then to take no account of the localization in the treatment.

But, says Huchard, the knowledge of the orifice affected is of secondary importance only for the indications for the drug. The therapeutic indications must be found in the cardiac muscle, as has been admirably expressed by Stokes. The situation of the cardiac souffle, its intensity and its absence, furnish no indications for the administration of digitalis; it is the state of the heart muscle and of the vessels, their feebleness (cardio-vascular asthenia) and asystolism, that demand digitalis. There exists in all cardiac affections a period intermediate between hypersystolism and asystolism, which Huchard calls hyposystolism. Suppose we have a patient in whom some months

ago there were all the signs of normal or even exaggerated compensation; the precordial shock was strong, vibrating, and well limited, the apex beat slightly lowered, urine normal in quantity, no trace of visceral congestion, and no oedema of the limbs. This patient now comes with slight perimalleolar oedema in the evening, becomes breathless easily, and has palpitations and a sensation of fullness of the chest. Examination shows slight congestion of the liver, which is painful on pressure, and pulmonary hyperaemia and oedema; the cardiac contraction is soft, unequal, and irregular, the impulse more extended, more diffuse, less sensible, the apex displaced, and cardiac dullness increased transversely; the first sound of the heart is more or less dulled or weakened, the second a little loud in the region of the pulmonary orifice and to the right of the sternum. The pulse is feeble and undulating, the jugulars swollen and prominent, and the urine scanty. In this case there should be no hesitation about prescribing digitalis, for there are three capital indications—feebleness of cardiac contractility, lowering of arterial and increase of venous pressure, and scanty urine, coexisting with peripheral oedema or visceral congestion.

The urine furnishes indications for the administration of digitalis; if it becomes uratic, and falls below 800, 500, or to 200 grammes a day, digitalis should be given. In giving digitalis in heart affections we should examine the urine as carefully as we do the thermometer in fevers.

In either asystole or hyposystole there may be three causes of error in regard to the contra-indications of digitalis: 1. The cardiac beats may be tumultuous and violent, the impulse of the heart becoming energetic for a few moments; but examination a few moments afterward may show that the energetic systoles are followed by weak or aborted and precipitate ones, constituting the cardiotoxic asystole of Gubler. Digitalis should here be prescribed as a

tonic and a regulator. 2. We may have a patient in whom the dilatation of the cardiac cavities strikes against the thin and emaciated chest walls, giving the false sensation of energetic and violent beats. Here the clinical error is doubled if a therapeutic error be made by withholding digitalis on account of supposed exaggerated compensation. 3. In asystole the dilated right heart is in immediate relation with the thoracic wall; if it lie close to the diaphragm the beats may be communicated to the whole epigastric region. The extent of these beats is no indication of their force; they will be found feeble, undulating, and scarcely appreciable, and digitalis should be prescribed.

To recapitulate with regard to valvular lesions: Digitalis is useless in the period of eusystole, when the lesion is compensated; it is injurious in the hypersystolic period, when the compensation is exaggerated; it is efficacious in the hyposystolic or period of transient asystole, when the cardiac muscle and the vessels are suffering from asthenia, and when there are oedemas, visceral congestions, dropsies, and the heart beats softly and feebly; in the period of definite asystole, or of amyocardia, when the cardiac muscle is profoundly degenerated, digitalis is sometimes useful; it may be useless, or it may be injurious. It is in these cases that caffeine in large doses sometimes gives such signally good results.

What of the use of digitalis in palpitations and tachycardia? Arterial hypertension is not always a contra-indication to the use of the drug. In a certain state of cardiac ataxia digitalis is a true regulator of the heart before being an excitor of arterial tension and before being a tonic to the heart. Let us take the case of a mitral patient in the hyposystolic or asystolic period. The pulse is small, miserable, soft, depressible, and irregular; the blood-waves are feeble, unequal, and insufficient; the precordial shock is scarcely appreciable, and the ventricular contractions are

tremulous and abortive, constituting the flutterings of the heart that Stokes speaks of. But in the midst of these weak and debilitated systoles occur violent, tumultuous, and precipitate beats—a veritable state of cardiac ataxia. These palpitations do not always signify increased cardiac work. In palpitations in the hyper-systolic period, digitalis is injurious; in the hypotonic period it is useful.

Tachycardia is often confounded with palpitation of the heart. Digitalis is inefficient in the various forms of tachycardia, says Huchard.

Cardiac arrhythmia may be classified as valvular arrhythmia, myocardiac, reflex, toxic, and nervous arrhythmia. Digitalis may be used in the first, the second is rebellious to its action, and the other three should have causal and hygienic treatment.

Two varieties of cardiac pseudo-asthma must be recognized—one seen in valvular cardiopathies, the other in arterial cardiopathies. In the first, digitalis is useful; in the second, the patient must have an exclusive milk diet for from two to four weeks.

In arterio-sclerosis of the heart, digitalis alone is contra-indicated. It may be combined with nitro-glycerine. Distilled water, 300 grammes; tincture of digitalis, 3 grammes; alcoholic solution of nitro-glycerine (au centième) gtt. xxx. Dose, two to six tablespoonfuls a day. For angina pectoris, digitalis is always contra-indicated. In some anginous cases it may be given, however, for the hypotonic symptoms. In these cases, digitalis should be combined with nitro-glycerine or with iodide of sodium, as, iodide of sodium, 4 grammes; powdered digitalis, 2 grammes; glycerine, q. s. to make 40 pills. Take three or four a day for from five to ten days.

In the cardiac hypertrophy of puberty, and the menopause, digitalis may be given in sedative doses—small doses; in these cases preference should be given to arterial tension-depressors.

In nephritis and asystole of renal origin, digitalis may be guardedly used in chronic parenchymatous nephritis. It should not be used in the early stages of interstitial nephritis; in the later stages, when the heart fails, and other symptoms indicate, the following may be used: Distilled water, 300 grammes; benzoate of soda and caffeine $\frac{1}{2} \text{a}, 5$ grammes. Dose, four to six spoonfuls a day.

In aneurism of the aorta Huchard used some such formula as: Distilled water, 300 grammes; iodide of sodium, 20 grammes; thebaic extract, 0.05 centig. Take from two to four or five tablespoonfuls a day before meals, in a little beer. Continue during twenty or twenty-five days every month. Or, distilled water, 300 grammes, alcoholic solution of nitro-glycerine (au centième), gtt. xxx. Dose, three to six tablespoonfuls a day. Lessen the dose if it causes headache.

In the first stages of exophthalmic goitre, digitalis is often useless, sometimes injurious. Later, when the heart is temporarily or permanently enfeebled, digitalis is indicated.

In the fever of endocarditis, and the phenomena of cardiac erythema, aconite should be combined with digitalis. Tincture of digitalis, 6 grammes; tincture of aconite root, 4 grammes. Take six drops three or four times a day. In the paralytic form of pericarditis (Jaccoud), tincture of digitalis may be used in doses of twenty to forty drops a day, or the infusion may be used.

In senile pneumonia and bronchitis, digitalis or caffeine must be used. Digitalis has some disadvantages. Tanret uses the following formula, as does Huchard: Benzoate of soda, 3 grammes; caffeine, 2.50 grammes; distilled water, 6 grammes. Make the solution warm. Inject subcutaneously a quantity containing 0.25 centig. of caffeine.

The following are some of the ways in which Huchard prescribes digitalis:

Alcohol (90°), 3 grammes, 50.

Homolle's amorphous digitaline, 0.02

centig. S.—Take ten drops—which contain one millig.

The following is for subcutaneous injection:

Homolle's amorphous digitaline 0.10 centig.
Alcohol 25 grammes.
Water 25 grammes.

Ten drops contain one millig. of digitaline. Inject deep twice a day into the muscular portion of the back.

Beaujon's oxymel diuretique—to give tone to the vessels and heart, act on the kidneys, and calm cardiac excitability.

Alcoholic tincture of digitalis...
Aqueous extract of ergot aa...10 grammes.
Gallic acid..... 5 grammes.
Bromide of potassium.....
Cherry-laurel water aa.....30 grammes.
Sirup of cherry.....400 grammes.
Oxymel of squills.....515 grammes.

Dose, two to three spoonfuls a day in water.

Diuretic and laxative powder:

Powdered sulph. of potash....
Soluble cream tartar.....
Powdered nitrate of potash aa..6 grammes.
Powdered digitalis leaves..... 1 grammme.

Make 20 powders. One, three times a day.

Chomel's pills (for albuminuria with anaemia):

Powdered squills.....
" digitalis aa.....5 grammes.
Porphyritized iron4 grammes.

Make 40 pills. Take from two to six a day.

Diuretic and hydragogue pills:

Digitalis
Squills
Scammony aa3 grammes.
Sirup of gum..... q. s.

Make 100 pills. Take from two to six a day.

EXOPHTHALMIC GOITRE CURED BY TREATING THE NOSE.*

At a meeting of the Berlin Medical Society, January 18, 1888 (*Berliner Klinische Wochenschrift*, 1888, No. 6), Professor Fränkel reported a case of Basedow's disease which seemed to depend on hypertrophy of the nasal mucous membrane and was cured by cauterization.

The patient was a young man, seventeen years old. There was a considerable enlargement of the thyroid, and a pulse of 120 beats a minute. After having been treated for some time for these symptoms, he incidentally called attention to a narrowing of his nasal passages, which was so great as to interfere with his breathing. The galvanocautery was applied to the inferior turbinate bone on the left side. This was followed by a marked diminution in the frequency of the pulse and by a disappearance of the goitre on the left side. Three weeks were allowed to elapse, during which no change was discovered in the patient. The pulse rate, though slower than before, was still abnormally fast, and no change occurred in the goitre. The right side was then cauterized in the same way as the left when, almost immediately, the pulse sank to normal and the goitre disappeared.

Professor Fränkel mentioned "one case, described by Hack in the year 1886, in which Basedow's disease had been cured by treatment of the nose." This report has called out a paper by Dr. Hopmann, (*Berliner Klinische Wochenschrift*, 42), in which he calls attention to a similar case reported by himself in 1885.

It would seem hardly necessary to trouble the reader with the theoretical points discussed in the paper, but the history of the case is so interesting that we give it entire.

"Mrs. Hamacher, forty years old, came under my treatment on the 11th of October, 1883, on account of a secretion of mucus in the throat, an inclination to hawk, together with cough and occasional dis-

**Berliner Klinische Wochenschrift*, Nos. 6-42. Abstracted and translated by Dr. Lester Curtis.

charge of masses of firm secretion. At the same time she complained of an uncommonly great prostration, and weakness in the legs, palpitation, of the heart, and pain in the eyes, especially the right. The painful pressure and tension in the eyes are accompanied by discharge of tears. These symptoms have continued uninterruptedly for two years. Drying the face with a towel occasions an almost unendurable pain in the eyes, especially in the right; therefore, she has stopped touching the eyes when washing the face. She has often the appearance of motes and clouds before the eyes. At night there appear sparks. There is also right-sided pain in the forehead.

"The expression is peculiarly staring. Pressure upon the eyeballs, of which the right is especially prominent, is extremely painful. The pulse is 120 to 126. There exists rhinopharyngitis sicca, with extensive accumulation of scabs in the nose and roof of pharynx—on the right side much more severe than on the left. On account of the trouble with the eyes, I sent the patient to the Cologne eye clinic where Dr. Samelsohn asserted the perfect soundness of the dioptric apparatus and the retina; still, he showed that on both sides, and especially on the right eyeball, Gräfe's symptom [want of correspondence of the motion of lid and eyeball when looking down] could be demonstrated in a very striking manner. The exophthalmus in connection with this; the very marked angina; and the general feeling of weakness, especially in the lower extremities, as well as the absence of all other local causes for the protrusion of the eyeballs, left no doubt that we had to do with those complex symptoms which we are accustomed to designate Basedow's disease, although there was no appreciable swelling of the thyroid gland.

"I will call attention to the fact that we have here an incomplete form of Basedow's disease, if we compare it with the complete form, which presents three symptoms—exophthalmus, rapid heart, and goitre, since

in this case one of the symptoms is lacking. However, according to Von Bamberger, even two of them may be lacking. Von Bamberger says in regard to this: 'There are cases which continue for years with only the symptom of palpitation of the heart; others with only enlarged thyroid; others with only the symptoms in relation to the eyeballs—the exophthalmus depending upon the dilatation of the retro-bulbul blood vessels.'

"In my case the appearance of goggle-eyes was distinctly marked on the right side only, while it existed on the left side in a much less degree.

"As I have repeatedly had the experience that obstinate eye symptoms have improved from the instant in which a nasal affection, up to that time neglected, has been benefited by appropriate treatment, I turned my attention in the treatment of my patient to the quite marked rhinopharyngitis sicca. I have treated these cases for many years by the insertion of strips of cotton batting; indeed, I had already used this treatment for some time before Gottstein (1878) published his valuable communication on the use of tampons in ozoena. Since Gottstein's publication, I have extended this treatment to ozoena proper, where it is of more benefit than any other.

"In our patient there was no ozoena, only a very considerable atrophy of the mucous membrane, with a discharge of pus which was not fetid. As a result of the latter and a considerable enlargement of the nasal passages, the secretion dried in scabs and collected especially in the naso-pharynx and the roof of the pharynx, and was cast off with difficulty every few days. After the scabs were softened and removed, by the use of cotton for several days, there was a certain improvement in the pain in the forehead, the discharge of tears, and the painful feeling upon pressure in the right eyeball. I now found, on thorough investigation, that in the right nasal cavity there were small mucous polypi hanging

between the atrophied middle turbinated bone and the ethmoidal cells, passing off probably from the latter. In the course of the next few days I removed three of these, of the average size of a coffee-bean.

"After this operation, a striking improvement of most of the symptoms was noticeable. The patient stated that the improvement followed almost immediately upon the conclusion of the operation. The pulse fell from 120 to 130 beats, to from 90 to 100. Pressure upon the right eyeball was not so painful as formerly. The general condition improved markedly. The patient felt herself far stronger and fresher than before.

"In the beginning of November, Gräfe's symptom, though still plainly evident on the right side, had disappeared from the left.

"On the 10th of November I noted 'absence of the *muscae volitantes*, appearance of sparks in the dark, and pain on pressure in the right eyeball; exophthalmus disappearing; pulse, 92-100.'

"On the 20th of November, Dr. Samelsohn affirmed an equally marked improvement.

"Eight days later, Gräfe's symptom could be no longer detected on the right side, and the closure of the lids was normal; no feeling of pressure in the eyes or forehead; pulse, 88-92.

"Patient can wash and dry the face without experiencing the least unpleasant symptom. The insertion of cotton was continued.

"On the beginning of April, 1885, after a year and a half, the patient consulted me again, because she had been again troubled for some months with mucous secretion in the pharynx. She had been feeling entirely well and had begun to give up the use of the cotton; at least, she had used it quite irregularly, so the drying of the nasal and pharyngeal mucous membrane, as well as the collection of scabs, began to appear. Nevertheless, pain in the eyes had not appeared, nor an excessive secretion of tears

or other difficulty in the eyes. Polypi had not returned; protrusion of the eyeballs was not present; pulse, 92.

"While she was in this general condition, I showed her to the general medical society here* on the 21st of April, 1885. After that time the patient was for a short time, in June, 1886, under my treatment. She complained then that for about six months she had been troubled with *muscae volitantes*, clouds, and at night, the appearance of sparks. For eight days the power of vision had failed markedly, so that she was now nearly blind; she also felt weak and miserable. The eyes began to pain her again and to weep, and a 'wirr' occurred in her head whenever she strained her eyes in an attempt to see. The eyes are somewhat prominent, but Gräfe's symptom can not be produced plainly. Palpitation of the heart is occasionally present. Pulse, 96; no goitre. Fleeting pains in the back and extremities. No cotton has been used for eight months. She suffers much from dryness in the throat and hawks up almost every morning a mass of thick mucus. Polypi have not returned. Rhinopharyngitis *sicca*.

"The symptoms soon became better under the use of cotton, and it was scarcely two weeks before the patient could see quite well again.

"We have had to do, therefore, with a slight return of the eye symptoms in connection with, and dependent upon, an aggravation of the nasal trouble, which disappeared with the improvement of the latter."

OHIO SANITARY ASSOCIATION.

THE SIXTH ANNUAL CONVENTION AT CANTON, AND WHAT WAS DONE.

The sixth annual convention of the Ohio State Sanitary Association was held at Canton, Ohio, November 14 and 15. Among the members present were Dr. G. H. Ashmun, Cleveland; Dr. Byron Stanton, Commissioner of Health, of Cincinnati; Dr. D.

* Cologne.

E. Snyder, Scio; Professor A. W. Smith, Cleveland; Dr. C. O. Probst, Columbus; Professor Cady Staley, of the Case School of Applied Science, Cleveland; Henry Wood, Cleveland; Dr. T. Clark Miller, Massillon; Dr. R. Harvey Reed, F. C. Bodine, Dr. J. W. Craig, Mansfield; Dr. H. Hendrixon, Columbus; H. E. Beebe, Sidney; Dr. W. W. Pinnel, Frederickstown; Dr. A. T. Quinn, Wilmington; Dr. Thomas H. Hubbard, Toledo; Dr. John McCurdy, Youngstown; Dr. E. R. Eggleston, Mount Vernon; Professor E. A. Jones, Massillon; H. E. Daykin, Cleveland; Dr. J. C. Fahlenstock, Piqua; Thomas W. Gordon, Georgetown; Dr. James Boles, Alliance; and Drs. Lewis Slusser, Josiah Hartzel, J. Whitney, C. N. Lyman, and others, of Canton.

President Ashmun occupied the chair, with Dr. R. Harvey Reed as secretary.

The reports of standing committees were called for, when Dr. T. CLARK MILLER, chairman of the legislative committee, stated that a great advance in the interests of sanitation had been made by the passage of a law by the Ohio Legislature compelling the organization of a board of health in every city and town containing more than five hundred inhabitants. He thought it was highly necessary that the people should be educated in sanitary matters.

Dr. D. H. BECKWITH, of Cleveland, was an ardent advocate of free speech, and his motion that all papers read before the association be immediately discussed was carried.

Dr. R. HARVEY REED then read a paper on the "Prevention of Typhoid Fever."

In the discussion which followed, Dr. G. C. ASHMUN, of Cleveland, said that typhoid fever often made its appearance under similar circumstances in which diphtheria had prevailed in the same locality the year before, and that, when typhoid fever prevailed, it was always with bad sanitary surroundings.

Dr. BYRON STANTON, of Cincinnati, thought there was no disease so easily prevented as typhoid fever, except, perhaps,

small-pox. Last year the disease prevailed to an unusual degree in Cincinnati, no doubt caused by the city's water supply, which was taken from the Ohio River. As soon as the people commenced to boil the drinking water and that used for culinary purposes the affliction disappeared.

Dr. D. H. BECKWITH, of Cleveland, said: If we keep on with our germs and sanitary inspectors we will have to give up our ice-water and many of our foods for fear of them.

Dr. T. CLARK MILLER, of Massillon, said typhoid fever is simply a filth fever, and to avoid it was not to know whether it was produced by a germ or not, but to teach people to avoid all filth.

At the afternoon session the subject came up again.

Dr. REED believed that typhoid fever was propagated by a specific germ that was destroyed by boiling.

Dr. JOHN McCURDY, of Youngstown, Ohio, said that he did not believe that boiling water or cooking food alone would prevent typhoid fever, but that personal cleanliness was a large factor in its prevention.

Dr. JOSIAH HARTZEL then read a paper on "Canton's Water Supply."

In the discussion which followed, Dr. McCURDY said that he thought that artesian wells were of a very questionable character, but when a city could get a pure supply of water from an artesian well it was exceedingly fortunate. Youngstown, he said, was contemplating a filter system, but found it too expensive. They finally decided to get Pasteur filters and put them in the houses, furnishing them to the people at cost.

Dr. G. C. ASHMUN said that he had tested a large number of filters, but found it impossible to free the water of germs.

Dr. REED said that Dr. Sternberg stated that he had tested this filter for germs and found it proof against them when clean, but not when dirty.

"The Relation of the Work of the School to the Health of the Child" was the

subject of a paper by Professor E. A. JONES, of Massillon. It was discussed by Dr. Eggleston, of Mount Vernon; Dr. Reed, of Mansfield; Dr. Miller, Dr. Ashmun and Dr. McCurdy.

Dr. E. R. EGGLESTON followed with a paper on "Meteorology as Related to Morbidity," which was discussed by Dr. Beckwith.

Dr. McCurdy presided at the evening session. The Hon. John F. Blake, mayor of Canton, briefly welcomed the association to the city, and President Ashmun responded on behalf of the association.

Dr. Miller, Dr. Reed, and Dr. Slusser were appointed to consider and report upon a suggestion of the president in regard to the association becoming auxiliary to the State Board of Health.

Dr. THOMAS HUBBARD, of Toledo, then read his paper on "Hot Air vs. Steam for the Heating and Ventilation of Dwellings," which provoked considerable discussion.

Dr. McCURDY said that Youngstown had tried both steam and hot air, and he thought the latter the best.

Dr. ASHMUN stated that Cleveland had tried to utilize the cold air shafts for the dry-closet system, but failed for two reasons: First, that they were not high enough; and second, because they had too many air-draughts in them. Since these defects had been remedied, however, the system was working satisfactorily.

Dr. REED stated that he had studied heating and ventilation for years, and he preferred the warm air as the best and cheapest.

"Is it a good idea to put in a dry closet when there is a sewer system?" asked some one in the audience.

"If it is a school-house I would, but if a private dwelling I would use the sewer," the doctor replied.

Mr. BOUR, of Canton, opposed the system. "It fills the air with poisonous germs and the rooms with obnoxious smells."

Alexander McGregor thought the system a failure. He thought it wrong to imperil the health of the children by its use. Not

only this, but it had been decided upon for a number of new buildings without those pushing the matter waiting to see whether it were true or false. He appealed to the people of Canton if the system was not a failure, and putting the system in other buildings under the circumstances was a mistake.

At the Thursday morning session Professor J. J. BURNS, principal of the Canton schools, read a very entertaining paper on "Contagion of Health." It was not the conventional scientific dissertation, but happy, brilliant, and original.

This was followed by a paper on "Sewers for Small Towns," by Professor CADY STALEY. At the conclusion of the paper the subject was discussed by Dr. McCurdy, Dr. Ashmun, Mr. Wood, Dr. Stanton, and others.

Professor ALBERT W. SMITH followed with a paper on "The Water Supply of Cleveland."

At the request of the committee having the matter in charge it was decided to postpone the consideration of the motion made in a previous session, to the effect that the association become auxiliary to the State Board of Health.

The nominating committee made its report at the opening of the afternoon session. They named the following, who were duly elected as the officers of the association for the ensuing year:

President, Dr. D. M. Beckwith, Cleveland.

Vice-Presidents, Josiah Hartzel and Dr. Lewis Slusser, Canton, and Professor E. A. Jones, Massillon.

Secretary, Dr. R. Harvey Reed, Mansfield.

Treasurer, Dr. M. J. Weaver, Dayton.

Later, the newly-elected president announced the standing committees for the year:

Executive Committee—M. J. Weaver, M. D., Dayton; W. J. Conklin, M. D., Professor J. J. Burns, Canton; H. E. Beebe, M. D., Sydney; Professor E. T. Nelson, Delaware.

Committee on Publication—R. Harvey Reed, M. D., Mansfield; J. C. Ashmun M. D., Cleveland; S. H. Brundage, M. D., Xenia.

Committee on Membership—John McCurdy, M. D., Youngstown; James Allison, Cincinnati; W. S. Cretchen, M. D., Bellefontaine; G. A. Collamore, M. D., Toledo.

Committee on Legislation—C. C. Probst, M. D., Columbus; T. Clark Miller, M. D., Massillon; L. C. Herrick, M. D., Columbus; Byron Stanton, M. D., Cincinnati; E. R. Eggleston, M. D., Mount Vernon.

"Heating and Ventilation" was the subject of a brief paper by FRANCIS C. BODINE, of Mansfield, which was read and discussed.

Dr. LEWIS SLUSER followed with a paper on "Fraud in Dressed Beef," in which he said that much of it was unfit for use. That the cattle were frequently suffering from disease when killed, and the meat when it arrived at its destination was frequently sticky and contained accumulations of pus.

Dayton was decided upon as the next place of meeting, while the time was to be fixed by the executive committee. Some of the members desired that the meeting be held as near Columbus as possible, that the members of the State Board of Health might be able to be present. One of the members stated that the association was the oldest and only organization of the kind in the State, and at this, its sixth annual convention, one member of the State Board of Health was present. Another gentleman said that while he would like to have the members of the State Board of Health present, and desired that they be invited, he did not believe in importuning the members to attend.

Dr. Ashmun then presented Dr. Beckwith, the newly elected president, to the association. The doctor said that he esteemed it a very high compliment. He referred briefly to the career of the organization, and said that he would do all he could to make the year a profitable one to the members and the next meeting at Dayton a success.

The citizens of Canton returned a vote thanks, on motion of Mr. Hartzel, to the members for meeting at that place, and the association adjourned.—*The Sanitary News.*

ARTIFICIAL AND NATURAL WATERS.

AMERICAN MINERAL SPRINGS—FRAUDULENT IMPORTATIONS AND SPURIOUS CLAIMS.—Dr. Enno Sander, of St. Louis, in *The National Bottlers' Gazette*, says of domestic and foreign waters :

The United States of North America have a remarkably diversified climate; they are blessed with a wonderful variety of the finest natural agricultural and horticultural products, and their mountains not only harbor in their bowels an enormous mineral wealth, but from their interior flow an endless variety of mineral waters, and a very large number of all sorts of the most valuable mineral springs. Our present knowledge of the entire surface of the country is but limited; but two years ago, the U. S. Geological Survey had already reported 8,843 individual springs in 2,822 localities, of which 787 had been analyzed, and 634 used as resorts for recreation and health, but only 223 commercially. They represent every variety of mineral waters, from the pure alkaline to the strongly purgative, impregnated with large quantities of saline ingredients, and thermal springs with a temperature ranging from 90° to 200° Fahr.

There are springs so pure that they contain but a small fraction of a grain of solid substances in one thousand grains of water; others which are strongly and fully impregnated with mineral ingredients of great medicinal value; while again others present, in the perfect composition of solids with gases and water, such an excellent combination as to render their taste exceedingly agreeable and refreshing. Under a careful and circumspect management they could be, and, to some extent, have already been, utilized as very

popular resorts. Many of them, with beautiful surroundings and bountiful fresh air, offer to the sick or worn out a desirable spot, where body and mind may gradually recuperate from their infirmities, and the impaired faculties ultimately restored to their original health.

While it is granted that thousands and thousands of our fellow-countrymen and women avail themselves annually of the advantage offered to them in our own country, how is it that with all this bountiful wealth at home, foreign watering places are filled with, and almost sustained by, visitors from this country, and our markets annually over-flooded with an enormous quantity of European bottled waters? According to the "Statistical Trade Review" of the *National Bottlers' Gazette*, there were imported during the first six months of the present year, 1,564,322 gallons of mineral waters, or over 60,000 gallons more than during the same period of last year, and all of it was passed free of duty as "natural mineral water." What can be the cause of this remarkable phenomenon? Is the foreign product of a quality superior to our own? or are the majority of our people not aware of the excellent qualities of our own waters and the wonderful quantity of our natural wealth?

BOTTLED MANUFACTURED WATERS.—The average American citizen is conservative; he loves his country above all; he desires to develop its resources as fast as it can be done, and cheerfully supports every enterprise tending to this end; but it seems that he has not yet been sufficiently informed in regard to the importance of this mineral water question. The most beneficial use is made of natural mineral water at the spring itself, where all its qualities are unimpaired, and its full benefits can be enjoyed. But "many diseases do not admit of delay, and for this purpose the bottled waters are applicable. However, there is not the care used in bottling waters that should be observed.

There are but few waters that are at all adapted to shipment; the gases escape, and some of the chemical ingredients are decomposed" (George E. Walton, M.D., "The Mineral Springs of the United States and Canada," 1883, p. 113). Besides these facts, it has been ascertained by careful and often repeated observations and analysis that mineral waters (especially those exhibiting a high temperature, and those containing sensitive metallic and earthy oxides, which are promptly affected by the oxygen of the atmosphere and converted into insoluble dioxides) are readily decomposed, and deposit some of their solid ingredients almost as soon as the water has issued from the earth. It is evident that in such cases the waters are not adapted to bottling, and the public should be warned against the acceptance of assurances, which always are readily made by the salesmen, that the bottled waters contain all the solid ingredients of, and are, therefore, equal to, the fresh waters of the springs. "Prompted partly by scientific interests, and partly by the desire to offer to sufferers, who live long distances from mineral springs, an opportunity of enjoying their beneficial action, efforts were made to reproduce these waters by artificial process. * * *

And, in the course of time, this end has been attained with such perfection as to permit the artificial product of to-day to place itself alongside of and compete in every respect with the natural mineral waters" (Liebig's Chemical Dictionary, 1851, Vol. V., p. 320).

THE CAUSATION OF COLD-WEATHER DISEASES.

Henry B. Baker, M. D., Secretary of the Michigan State Board of Health, in an attempt to explain the causation of inflammations of the air-passages, and the seasonal susceptibility to certain communicable diseases which are shown to be most

prevalent in cold weather, has drawn the following conclusions:

1. That diphtheria, scarlet fever, and small-pox increase after the atmosphere is cold and dry, and decrease after the atmosphere is warm and moist.
2. That the three communicable diseases named above probably generally enter the body through the air-passages, and that the reason why they increase after the cold months is because of the greater susceptibility of the air-passages in those months; that this is the reason why the curves for these communicable diseases are found to follow the curves for influenza, tonsilitis, and bronchitis.
3. That the non-volatile salts of the blood exuded in excess into and upon the mucous surfaces of the air-passages are capable of leading to an inflammation which is called "influenza," "tonsilitis," or "bronchitis," according to the portion of the respiratory tract involved.
4. That, other things being equal, the non-volatile salts are left by evaporation on the mucous lining of the air-passages in proportion to the dryness of the air inhaled.
5. That, inasmuch as the absolute dryness of the air ordinarily depends upon its coldness, the inflammations of the air-passages should be expected to rise as they do after the cold dry weather, and fall after warm moist weather.
6. That the non-volatile salts are likely to be in excess in the blood under some conditions of diet, or non-action of the skin or kidneys through which, under normal conditions, they pass out of the body. Therefore,
7. That certain kinds of diet, or non-action of the skin or kidneys, may predispose to inflammation of the air-passages, and consequently to any communicable disease, which enters the body by way of the air-passages, to which the person may be susceptible.
8. That, aside from the cause herein assigned (non-volatile salts), no other

known cause, capable of causing inflammation of the air-passages, is "present and acting" in proportion to the coldness and dryness of the atmosphere.

In connection with the foregoing, a few supposed facts, not entirely outside of the province of this paper, should be held in mind because they tend to modify the force of the evidence herein presented:

- a. Vaccine virus (and, therefore, possibly the virus of the cold-weather communicable diseases) retains its vitality longer in cold than in warm weather.
- b. The danger of contracting a communicable disease is probably increased by exposure to the contagium in a badly-ventilated room, and rooms are most frequently badly ventilated during the cold weather.

But neither of these two statements is known to be true so nearly in proportion to the temperature of the atmosphere as to explain the close correspondence with which the curves of these diseases follow the curves representing the temperature of the atmosphere. And since it is proved in this paper that the ordinary inflammations of the air-passages also follow the rises and falls of the atmospheric temperature, and are believed to be non-contagious, their equally close correspondence with the temperature changes can not be accounted for by the varying degrees of vitality of a virus, nor by bad ventilation, especially as they are so frequently traced to exposure to cold outdoor atmosphere.

9. That, so far as is yet proved by statistics of large numbers of cases, the strongest controlling cause of inflammatory diseases of the air-passages is exposure in a cold, dry atmosphere.

10. That, excepting inoculation and other similar exposure to the specific cause of the disease, the strongest controlling cause of the spread of those communicable diseases which generally enter the body through the air-passages is exposure in a cold, dry atmosphere.

THE PATHOGENESIS OF EPIDEMIC DIPHTHERIA.

Review of a recent work on the subject, considered from a histological standpoint, by Dr. M. J. Oertel, professor at the Munich University; with atlas of sixteen chromolithographic tables. Leipzig: F. C. W. Vogel. 1887. Translated from the *Correspondenz-Blatt für Schweizer Ärzte*, Bellage No. 17, September 1, 1888, by Dr. James I. Tucker.

Though we have not succeeded in determining unerringly the kind of fungus, and, by its culture, in producing artificially the disease in exact conformity with its natural course, nevertheless the cause of diphtheria is a micro-organism.

This micro-organism settles itself principally in the oral cavity, penetrates the epithelium of the mucous membrane, and, increasing, produces a transformation in which springs forth a chemical poison. This ptomaine (and after all not the fungus itself) gives rise to all the subsequent complex of symptoms on account of profound injury to cell-life.

This alkaloid diffuses itself in the epithelium and in the fluids of the tissues and cells. In response to the ovulation it causes the multiplying white blood corpuscles to take up the poison and perish. The effete material absorbed poisons new cells. This destructive process goes on in the mucous membrane of the throat, tonsils, and the lymphatic glands belonging to the primitive group.

The blood conveys the diseased cells (acted on by the chemical poison) to all parts of the body; these cells injure the vascular walls, the spleen, kidneys, and nervous centres. The same form of cell-destruction on all sides! The nuclear membrane dissolves; the nuclear substance, cellular substance, chromatin, break down and are transformed into a conglomerate mass. Globules, flakes, scales, granules, finely-pulverized, crumbling, dusty ruins is all that remains of the cells. Through an admixture of a fibrinous exudate from the blood arises a retiform, fibrous coagulum out of the ruins.

The peculiar brightness of the hyaline of

degenerated albuminoid substances makes its appearance; increasing serous saturation liquifies the perishing mass. If this mass lies near the surface it breaks through and coagulates, forming the so-called "diphtheritic membrane"; if it lies deep the end is liquefaction and perfect dissolution.

Thus, from the immigration of the fungus, comes first a local deposit, and then a universal infection.

Since Oertel determines for this disease the morbid processes which take place in most diverse organs, thus enriching cellular pathology by an exhibition of cells, carrying on a struggle with the diphtheria-fungus, he has probably established a fact that similar cell-alterations may also occur in other infectious diseases (vide Ziems-sen's Archiv., Bd. 42, s. 511). Therefore, his work has a significance of all the more general importance.

A CASE OF COCAINE POISONING.

Reported by Dr. Friedrich Haenel (*Berliner Klinische Wochenschrift*, No. 44). Abstracted and translated by Dr. Lester Curtis.

A dentist injected 0.1125 (1 $\frac{1}{4}$ grains) of cocaine in two doses into the gum of a girl nineteen years old, preparatory to the extraction of a tooth. Immediately after the extraction signs of unconsciousness appeared; then she grew very pale, fell, and was attacked with severe convulsions which were interrupted by short pauses. Nitrite of amyl and cold applications to the head were of no benefit.

"When I saw the patient she lay upon the sofa perfectly unconscious, groaning; her face was slightly cyanotic, and she did not react to any sort of irritation. The whole body, buttocks and extremities, were agitated by violent clonic convulsions. These continued for five hours, with pauses which became gradually longer and more frequent. The facial muscles were not affected by the convulsions. The pupils were moderately wide and without reaction. There was no exophthalmus. The skin felt warm and dry. The temperature in the axilla,

taken at the end of this stage, was 38.2 [100.8° Fahr.] The pulse, in the beginning, could not be counted; later, it was 176 beats a minute. The frequency of breathing amounted to 44. After the cessation of the convulsions, the patient lay quiet for two hours, all the time unconscious.

"After her return to consciousness, she stated that she was perfectly sensible of the second cocaine injection, but did not remember anything after that. She was unable to stand; when she was straightened up she doubled together again; she could sit only doubled up; she was unable to raise her arms or to press the hand offered to her. She had intense photophobia, diminished sensibility of the skin, anæsthesia of the mucous membrane of the nose and oral cavity, entire loss of taste and smell, dryness and burning of the throat, thirst, severe retching, pulse 132, respiration 28. Cardalgia then occurred, at first slight, but becoming, afterward, very severe.

"In addition, retention of urine occurred for twenty-four hours, but, after the first scanty, concentrated urine was voided, the secretion became normal. There was sleeplessness for thirty hours, entire loss of appetite for four days. The other symptoms disappeared after two or three days. She could walk with trembling knees after forty hours. The cardalgia remained for six days. All symptoms finally disappeared.

"It may be mentioned, in addition, that the girl, except for a fractured bone and slight chlorosis, had always been well. She denied, positively, ever having suffered from convulsions. Unfortunately, I was unable to get any information from her parents. The heart and other internal organs were healthy, menstruation normal."

These symptoms are like those produced by the drug in the lower animals. These are lessened sensibility, unconsciousness, epileptiform convulsions, "which have a cortical origin, and are dependent on anæmia of the cortex, conditioned on vaso-motor

spasm." There is enormous increase in the blood pressure and great acceleration in the heart's action, dependent on irritation of the acceleratory apparatus. Secretion from the mucous membrane and kidneys is diminished.

The largest safe dose of cocaine is stated by Lauderer to be 0.15 ($\frac{1}{4}$ grain). Decker says 0.02 (3-10 grain), possibly, under special conditions, 0.03 (45-100 grain). Doses, however, of 0.1 ($1\frac{1}{2}$ grains) to 0.2 (3 grains) have been given without bad results, showing of course that great difference in the toleration of the drug exists. The largest dose ever given by Dr. Haenel was 0.035. This dose was followed by no unpleasant results.

The treatment for cases of cocaine poisoning has been indicated in the history of the case. Nitrite of amyl acts very well in slight cases.

DISINFECTION AND DEODORIZING OF IODOFORM.

In the *Pharmaceutische Post* for September 30, 1888, Dr. R. Jaksch makes a statement, which we feel confident will be a surprise to many of our readers, that iodoform as an antiseptic and as a parasiticide is absolutely worthless, and he quotes a number of authors who have proved that iodoform scarcely interferes with the development of the various kinds of micro-organisms. The grounds, then, on which is based the wonderful success which has followed the employment of iodoform in the treatment of wounds seem to be thoroughly unknown, unless it may be that iodoform prevents the formation of ptomaines in the wound. To sterilize iodoform, Dr. Jaksch recommends its combination with an antiseptic, selecting one which would not be poisonous in the quantities which are usually employed as a local application to wounds. The author states that he has found that the antiseptics which themselves possess a specific odor, when combined with iodoform, not only reduce the odor of the latter, but largely

lose their own odor, and by combination of iodoform with carbolic acid, thymol, naphthalin, and creolin, iodoform is both sterilized and deodorized. Of all these substances, the author gives the preference to creolin on the following grounds: *First*—It is the best antiseptic. *Second*—It is entirely free from any poisonous action on the higher organisms; as much as seven hundred and fifty grains have been given internally to dogs and horses without the production of the slightest symptom of poisoning. *Third*—Even in small amounts creolin thoroughly does away with the penetrating odor of iodoform.

Creolin-iodoform (1 to 2 per cent.) well rubbed up is a brownish powder of slight aromatic odor, soluble in alcohol and ether. When suspended in water the creolin is dissolved while the iodoform remains undissolved. Dr. Jakob states that for a month or more he has been using creolin-iodoform in only 2 per cent. mixtures in the treatment of various wounds, ulcers, and abscesses, both in the form of a powder and as iodoform gauze, and he believes that his results are even better than would follow the use of the pure iodoform.—*The Therapeutic Gazette.*

BOOK REVIEWS AND NOTICES.

THE EAR AND ITS DISEASES; being Practical Contributions to the study of Otology. By SAMUEL SEXTON, M. D. Edited by CHRISTOPHER J. COLLES, M. D. With numerous original illustrations. New York: William Wood & Co. Chicago: W. T. Keener. Pp. xii and 461. 1888.

In this work on the ear, the author has not attempted to cover the whole field of otology, but has selected certain subjects which he considered deserving of special attention. Some of them have been more or less fully treated of in other works upon the ear; others that are related directly or indirectly to the subject of otology are here presented in a way calculated to attract more attention to them than they have before received. The book reflects the ideas of the author based largely on his individual practice, which has been large and afforded him

good opportunity of observing, and contributing to the growth of scientific otology, which is of so recent origin. Much as the author has restricted the scope of his work, it yet gives a good idea of the recent advances made in this specialty, and suggests how others can and should be made in the proper development of the subject. It thus becomes a valuable contribution to its literature.

A TEXT-BOOK OF HUMAN PHYSIOLOGY.

By AUSTIN FLINT, M. D., LL. D., Professor of Physiology and Physiological Anatomy in The Bellevue Hospital Medical College, New York, etc., etc., etc. With three hundred and sixteen figures in the text, and two plates. Fourth edition, entirely rewritten. New York: D. Appleton & Co. Chicago: W. T. Keener. Pp. xvii and 872. 1888.

In the eight years which have elapsed since the third edition of Flint's Physiology was issued, such changes have occurred that the author decided to re-write the book rather than to attempt to so remodel the preceding edition as to make it in keeping with the requirements of a text-book on physiology at the present time. Acceptable as the earlier editions were in their day, this fourth edition will be found more so, and the author and publishers alike are to be congratulated upon the results of the work in this edition. The text is clear and concise; the illustrations are clean cut, and serve to illustrate and explain, not to mislead and confuse, as too often happens in inferior illustrations.

Printed on good paper, with perfect type, makes reading of the book a pleasure.

It is divided into twenty-six chapters, which cover the field of physiology very fully. An effort has been made to present matters now generally accepted as facts, rather than to state conflicting theories yet sub judice. It may, therefore, be accepted as representing the most advanced ideas of human physiology of the present day, and it will continue to be regarded as a standard text-book on the subject. A more detailed review of a work whose general characteristics are so well known would seem superfluous. It merits the commendation it will receive.

A MANUAL OF OPHTHALMIC PRACTICE.

By CHARLES HIGGINS, F. R. C. S. E., Lecturer on Ophthalmology at Guy's Hospital Medical School, etc., etc. With illustrations. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener. Pp. viii and 314. 1888.

This manual is divided into two parts. The first consists of twelve chapters, beginning with refraction, followed by the methods of examining the eye, and then considers very briefly affections of the eye and its appendages.

Part second consists of seven chapters, and relates to operations, both upon the appendages of the eye and upon the eyeball, with such details relating to operations as will be found serviceable to beginners in ophthalmic work, for whose benefit the work seems chiefly to have been prepared. The author's aim has been to be concise and practical.

HAND-BOOK OF HISTORICAL AND GEOGRAPHICAL PHTHISIOLOGY. By GEORGE A. EVANS, M. D. New York: D. Appleton & Co. Chicago: A. C. McClurg & Co. 1888. 8vo. Pp. v and 295.

This is a brief compilation from all available sources on the history and geographical distribution of tuberculosis of the lung. The author seems to have chosen a most unfortunate and unscientific title. Phthisis should not be used except in its strict etymological sense. It should be forever divorced from any essential relation with pulmonary tuberculosis. The condensation from the "Tenth U. S. Census Report" is a valuable epitome, but it is that alone. The book is written without an argument or object. It overflows with quotations. The most valuable part is the statistical tables showing the death-rate from consumption in each of the States by counties.

B. H.

THE MEDICAL NEWS VISITING LIST FOR 1889. Weekly (dated, for 30 patients). Monthly (undated, for 120 patients per month). Perpetual (undated). Philadelphia: Lea Brothers & Co., 706 and 708 Sansom St.

Each in one pocket-size volume, containing 48 pages of indispensable data, with 5 illustrations, and 176 pages of classified blanks, ruled on fine writing paper. Flexible red leather, flap and pocket, pencil, rubber, and catheter-scale, \$1.25. Thumb-letter index, 25 cents extra.

Thoroughly revised and brought up to date in every respect. The text portion (48 pages) contains data useful in the daily work of the physician and surgeon, including the latest therapeutic novelties, their doses and effects. The classified blanks (176 pages of paper suitable for pen or pencil) afford space most conveniently arranged for all records of practice, business, etc.

DOCTOR AND PATIENT. By S. WEIR MITCHELL, M. D., LL. D. Philadelphia: J. B. Lippincott Company. Pp. 177. 1888.

The author, in his introductory, says the essays—seven in number—which compose the volume, "deal chiefly with a variety of subjects to which every physician must have given more or less thought. Some of them touch on matters concerning the mutual relations of physician and patient, but are meant to interest and instruct the laity

rather than the medical attendant. The larger number have from their nature a closer relation to the needs of women than of men."

Much of the book is a natural outgrowth of the author's experience with women having real or imaginary nervous troubles, and the peculiarities which they exhibit under such circumstances. What is said regarding *The Physician* is a pen-picture of much that is experienced in the everyday life of most physicians.

Regarding his advocacy of camp-life for women there will probably be found wide difference of opinion in the profession and out of it, but he partly forestalls argument by saying "All kinds of modifications of the life I advise are possible."

The essays are written in any easy—almost colloquial—style, leaving an impression that they may have been written as much for the amusement of the writer as of the reader.

BOOKS RECEIVED.

Chemical Experiments for Medical Students. By W. S. Christopher, M. D.

Transactions of the Thirty-eighth Annual Meeting of the Illinois State Medical Society. 1888.

The Physicians' Interpreter. In Four Languages, By F. A. Davis.

Index Catalogue of the Library of the Surgeon-General's Office, U. S. Army. Vol. IX.

Ptomaines and Leucocaines. By Victor C. Vaughan, Ph. D., M. D., and F. G. Nooy, M. S.

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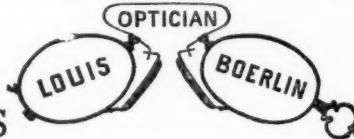
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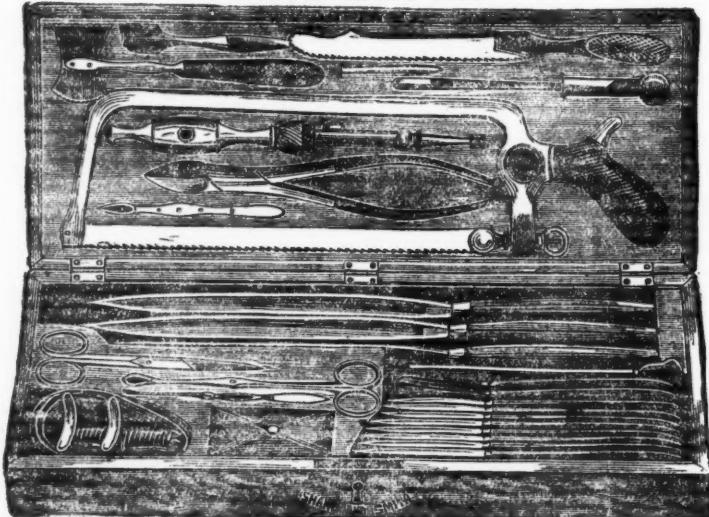
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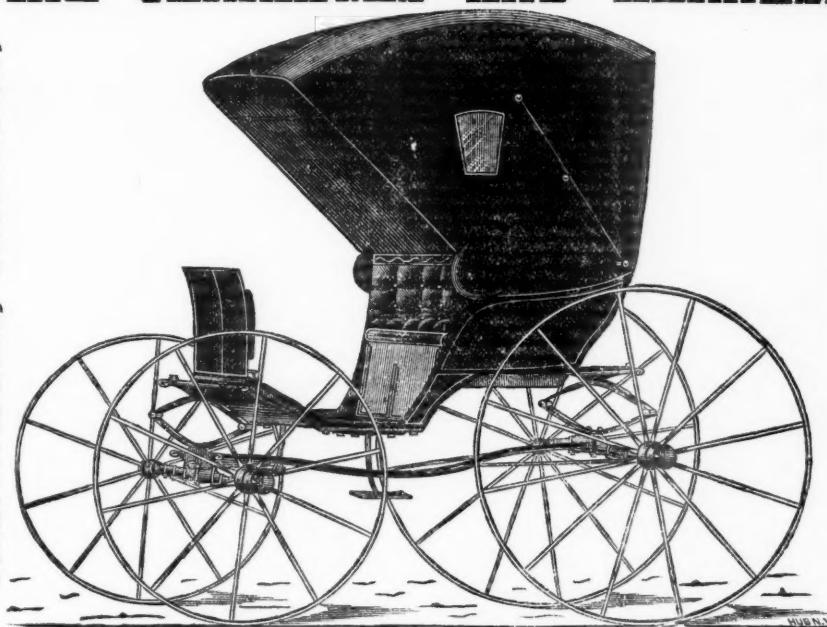
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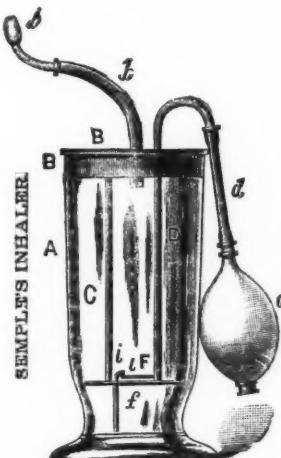
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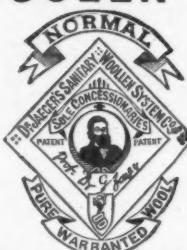
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